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A PHILOSOPHICAL QUARTERLY

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The Review of Metaphysics

A PHILOSOPHICAL QUARTERLY

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ON THE ELEMENTS OF BEING: II *

DONALD C. WILLIAMS

In one manner or another everybody grants that there is a very considerable correlation between the components of conscious experience and the processes of the body. The physical correlates of conscious tropes are then in general physical tropes—the patterns of arrangement and motion which behaviorally or physiologically are beliefs, discriminations, perceptions, desires, and the rest. In our happy-go-lucky way, however, the human functions we generally speak and think about are “mixed tropes,” like the “mixed modes” of the Cartesians. A belief, a sensation, an emotion, a purpose, is partly the conscious item and partly the behavioral one. On the model of such mixed tropes we must understand a love affair, an act of contrition or a piece of impudence, and thus too we must interpret the italicized words in a sentence like this, “His *display of anger* was equivalent to an *admission of belief* in the other’s boasted *power of divination*.”²¹ A word or a sentence in a particular occurrence is a trope, mental, physical, or mixed; “the same word” in many occurrences is the corresponding universal. This distinction differs from Peirce’s between “token” and “type” inasmuch as it avoids the usual identification of the token with the concrete ink splotch, for example, in which our trope inheres—an ill-timed obsession with Substance which is out of accord both with ordinary ideas and with the fact that most verbal tropes cannot plausibly be imputed to any special concreta anyhow. A word is a product of art, and art is full of analogous tropes. A statue is not a trope, but the connoisseur who gloats over its form, its texture, its color, is gloating over tropes. A musical performance, a song or a symphony, is a trope, and so is a musical theme—not the *kind* of theme which recurs throughout the same work in all its repetitions, but

* For the first part of this essay, see this journal, VII, pp. 3-18.

²¹ Quoted, with italics added, by Otto Jespersen, *The Philosophy of Grammar* (1935), p. 136.

any single case of the theme. The idea of the mixed trope may bring some order too into the philosophy of history, where Professor Ayer, for example, has recently wondered whether "the liberal tradition, or the American Constitution" is either a property or an individual.²²

If a bit of perceptual behavior is a trope, so is any response to a stimulus, and so is the stimulus, and so therefore, more generally, is every effect and its cause. When we say that the sunlight caused the blackening of the film we assert a connection between two tropes; when we say that Sunlight in general causes Blackening in general, we assert a corresponding relation between the corresponding universals. Causation is often said to relate events, and generally speaking any event is a trope: a smile, a sneeze, a scream, an election, a cold snap, a storm, a lightning flash, a conspiracy, perhaps a wave, and so on up to such big and important events that they have proper names, like the Passover and Lulu the H-bomb explosion. We have called a trope a "case" of its universal, while the universal is the "kind" of the trope, so it is no surprise that a medical "case" is a trope—in the sense, at any rate, in which a person is said to *have* a case of typhoid fever rather than to *be* a case of it (for the latter "case" stands for the whole concrete individual). A high-school boy, uncoached, has assured me, "Of course there's such a thing as Redness—this pencil *has a case of it*." When a scientist reports a temperature or a velocity or a viscosity he is reporting a trope—not a universal, because it is a once-for-all occurrence, but not a concrete thing either, though doubtless a component of one. He is likely to call it an "aspect" of the thing or, preferably, a "state," and generally speaking a "state" of a thing or a nation is a trope (though "state" too may mean a *kind* of state, the universal). Recent developments in sub-atomic physics, a none too reliable oracle, suggest that an electron, e.g., just is an existent state, and that the common-sense philosophy of concreta here abdicates altogether in favor of the trope.

Since events and processes are tropes, and also *cases* and *states*, one wonders about "facts," "*states* of affairs," and "what

²² A. J. Ayer, "Individuals," *Mind*, LXI (1952), p. 441.

is the *case*." Mary's beauty is a trope; Mary-being-beautiful, the "fact" which makes "Mary is beautiful" true, seems a similar but queerer business. Mr. Lewis is surely right that a state of affairs is "abstract and adjectival" rather than a "chunk,"²³ and it would be delightful to say that a state of affairs stands to its *proposition* as an ordinary trope does to its *property* (universal). But I shrink from endowing the theory of tropes with either the assets or the deficits of a theory of facts, of states of affairs, or of propositions.

A variety of trope which has been much entertained by philosophers unaware is that of geometrical figures, circles, triangles, and so forth. These have been alternately treated as if they were Platonic universals and as if they were concrete particulars, whereas in fact they are neither. Triangularity, to be sure, is an abstract universal, and a triangular object is a concrete particular, but a triangle is an abstract particular. Since a triangle, a circle, or any of the rest, while being particular, is an abstractum exhausted in one thin but salient character, the propensity of many generations of writers for taking them as typical "things" was perhaps largely responsible for that catastrophic doctrine of Real Essences by which truly concrete things like men or trees are supposed to be similarly dominated by a single Essential character in each.

If a geometrical figure is a trope, so is a woman's figure, and so is her complexion or her digestion—in that sense in which she is more concerned to take care of "her figure," "her complexion," "her digestion," than those of anybody else, however similar. Thus too when someone tells her, "I love the sweetness of your voice and the serenity of your brow," he does not mean, if he is wise or faithful, that *kind* of voice and brow, wherever they occur in the world manifold, but these particular cases. But while the complexion of a face, a smile on it, the whole expression of it, and every component of the expression, and the shape of the whole face or of any part of it, all are tropes, the face itself is a *surface*, and some logical philosophers who shy at "abstract entities" think that a surface escapes that epithet. Well, a surface does seem to occupy a sort of borderline status, but this is no more than our doctrine entails, for we have expressly denied that "between the

²³ C. I. Lewis, *Analysis of Knowledge and Valuation*, p. 55.

abstract and the concrete there can be no intervening stages." ²⁴ As the shape is to the surface, perhaps, so the surface is to the solid. The bigger difference is that a surface is "concrete" in two dimensions as a triangle on it is not concrete at all. This sort of quasi-concreteness, we note, belongs also to an instantaneous three-dimensional solid in comparison with one which is appreciably extended in time. Only an old familiarity with the terms of geometry, I think, makes anyone suppose that a surface or an instantaneous solid has in any fundamental way a more robust being than a four-dimensioned shape or temperature. Similar questions and answers may be expected to attend such entities as the Equator or a hole.

Many an entity often called "an abstraction," on the other hand, we may observe to be not abstract at all. God is not abstract, nor an angel, if they exist, and certainly the whole world manifold is not. A household is not, nor a church, nor a nation, nor the human race—these, in the usual acceptation, are concrete wholes which happen to be much scattered or fissured; or, if some of them are classes, then though they may be still more peculiar in some way or other, they are not peculiar by being less than such a whole, as an abstraction is. Grant that a sum is concrete and we might suppose that a set is sesqui-concrete—concrete and a half, so to speak—but that nice question lies off the path we pursue now.

To combat our motley horde of examples of the abstract particular or trope there are arrayed considerable forces of dialectic. An old indictment, "fallacy of hypostatization" or "reification," has been used against both the doctrine that universals exist and the doctrine that abstracta exist. It betrays not only the misapprehension that the universal is the abstract (and the particular the concrete) but the misapprehension that those who believe that abstracta (or universals) exist also believe that they are concreta (or particulars). To correct the second misapprehension first, what I assert is, of course, that abstracta exist

²⁴ Lewis, *op. cit.*, p. 475. Mr. Lewis, who elsewhere suggests there are degrees of abstractness, is here equating abstractness with universality, and concreteness and *universality*, we know, are just incommensurate.

as well as concreta—not that they exist in addition to concreta, and certainly not instead of concreta, but that they and concreta both exist as American counties exist as well as the states, or as yarn exists as well as socks, although all the counties are in states and much of the yarn is in socks.

The first misapprehension, that to be abstract *is* to be a universal, if left vague and implicit obstructs our thesis by adding to whatever liabilities properly belong to the idea of real abstracta the liabilities attached to the idea of real universals, plus the extra liabilities due to the uncritical merger of the two. Made explicit it frontally repudiates "abstract particular" as a contradiction in terms. Thus Professor Moore replied to Stout that "particular thing" *means* the same as "concrete thing,"²⁵ but, strangely enough, that "particular quality" must mean the same as "definite or determinate quality," so that he can make no sense out of Stout's proposal except that no two things have exactly similar shades of red, for example.²⁶ Professor Broad, in like vein, declared that it is plain "nonsense" to say that "the characteristics of particular things are particular,"²⁷ and that when McTaggart wrote that "the wisdom of Socrates" is distinct from Wisdom in general (in which we can see a suggestion of the principle of the trope), he must mean only to distinguish "the perfectly determinate degree and kind of wisdom which in fact characterised Socrates" from the relatively indefinite or "determinable" wisdom which is to the former as mere Redness is to the exact Scarlet of a given rose.²⁸ Partly these demurrers are deductions from whole rival theories of universals, which we can leave aside to take care of themselves, but partly they are due to less systematic prepossessions such as we have already treated by pointing out their

²⁵ "Are the Characteristics, etc.," loc. cit., p. 97.

²⁶ Ibid., pp. 100-103.

²⁷ *Examination of McTaggart's Philosophy*, Vol. I, p. 134. But he takes a more clement view on p. 140.

²⁸ Ibid., p. 25. To understand the theory of tropes requires a clear understanding that we do not mean by "the particular redness of the rose" just a perfectly definite value of the determinable Redness, which is still a universal, but the one abstract instance of it, numerically as distinct from other instances exactly like it as it is from a trumpet note.

mistaken origins, for example, in the double meaning of "characteristic" or "characterize."

Although the meanings of "abstract" and of "universal" are almost as distinct as being a Methodist and being married, the fact that the words could so often be treated as synonyms is readily explicable by the fact that, just as it might happen that almost all the Methodists we knew were married, and all the married persons we noticed were Methodists, so—on the profounder principles of the arithmetic of combinations and probability which ground "the inverse variation of intension and extension"—it does happen that almost all the similarity terms we notice are abstract and almost all the abstracta we notice are similarity terms.

This is not to say that, even in point of psychology, we never "abstract" except to "generalize," that is, never attend to an abstractum save to note that or whether it is replicated. A single sudden unique pain, for example, will arrest and absorb any of us. Among the many processes called "abstraction" only the most primitive quite deserves the name: the distinct awareness of the abstractum itself which occurs at the sensory and even the animal level. Hardly higher is a rudimentary generalization, the propensity to treat similar abstracta similarly; but the offices of conception are needed for awareness either that a given abstractum *is* abstract (and belongs to a concurrence sum) or that it exemplifies a universal (and belongs to a similarity set). It was perhaps inevitable none the less that in order to master in some degree the staggering abundance of existence, the virtually infinite number of almost infinitely complex things—in order, as our information experts say, to "code" it economically—we should in unphilosophical practice attach our words and ideas not to members of the fundamental and unitary category but to the two derivative categories of unity-in-plurality. Not giving much explicit attention to a trope as such, we use it to identify the vast sum of tropes in which it is concurrent (each of them determining its own similarity set) and the far-flung set of tropes to which it is similar (each of them determining a concretum). Vaguely convinced that these complexes are the warp and woof which weave the intelligible fabric of things, we forget the intersections

of which in fact they are composed, as the rows of a chessboard are composed of the squares.

In addition to complaints about the conjunction of particularity and abstractness there are complaints about particularity and about abstractness separately. Russell, for example, if I understand him, has thought that to admit absolute particulars at all, that is, differences of case which are not differences of kind, is to fall into the occultism of Substance;²⁹ this dread our analysis of substance is calculated to allay, though the supposed logical and empirical claims of the principle of the identity of indiscernibles may eventually need some more adjudication. The arguments which I wish especially to weigh now, however, are those which assert that the status of abstractness itself is incompatible with actual existence *in rerum natura*. Because our tropes are advocated not as entities additional to concreta but as constituents of them, any effective denial or defense of them must be an argument, not for or against a transcendent realm of being, but concerning what sorts of constituents are real and which, if any, are not, and hence the rights and significance of analysis.

When the issue is thus narrowed, the principal dialectical objection may be summed up in the old maxim that a true existent must be such as can exist by itself, *per se* and *in se*. We have called to witness the idealists that if this is taken without reservation, then ordinary concreta—men's limbs as well as their temperaments, the men as well as their limbs—cannot be real either, for only the world as an eternal whole exists *per se* and *in se*. To preserve the advantage of the ordinary concretum over the abstractum we must re-interpret "*per se*" to accommodate the former but not the latter. If we don't altogether beg the question by defining "*per se*" to mean concrete, the most we can say is that the concretum is comparatively independent of its context and that it can, within wide limits, be moved around without losing its identity. Whereas we can pull the stick or an atom out of a lollipop, and even put it back on demand, we can't strip off its color and shape, or extract the pure flavor of it, and still more obviously we cannot assemble a lollipop from such components.

²⁹ See *Human Knowledge*, p. 293.

Even this difference, however, thins out under examination. It is merely an accident of physical fact, after all, that sticks are not dissipated when removed from lollipops, or wheels from watches, as a volume of chlorine is when let out of a flask. Many concrete parts are physically incapable of removal, as the Mississippi River is from the Mississippi Valley, and most of them which are removable, as a whelk is from its shell, are so damaged by the operation that they are, as we say, "not the same thing at all." But whether removable or not in the ordinary sense of "removable," they are always irremovable in the one queer respect which is cardinal to our kind of question. For the actual events which comprise the existence of the watch wheel now before me on the table are numerically as distinct from those which comprise the wheel inside the watch ten minutes ago, or back inside the watch again two hours from now, as any of these is from my fingers or from Jupiter. Their community consists logically of only a continuity of similar events or states strung between. To bring this out best let us use the word "constituents" (what "stand together") for parts or components as they exist within a complex object as we describe it, and the word "ingredients" (what "go into" the object) for those entities with which we operate when we start generating it or when we are through disintegrating it. The wheels of a watch or the stick of a lollipop *qua* "ingredients" happen to be conspicuously affiliated with the wheels and stick *qua* "constituents." The milk, sugar, eggs, and flour which went to making a cake, however, or the flaccid and ruined organs dissected out of an animal body, are much less fairly described as "the same as" the constituents of the object while it lasted. The atomic theory was the great triumph of the feeling that things ought to have concrete parts which are at once constituents and ingredients, but with discontinuous and identityless electrons taking the place of atoms, this reassurance, limited to begin with, has become worth next to nothing. If now we turn back to our abstracta, the situation seems much the same with them. They often cannot be "moved" in even the crude sense in which some concreta can, but in whatever sense "the same" wheel survives when taken from a watch, in that sense, if we can believe our eyes, the color of a blouse, for example, may be transferred to the wash

water, or the glare of an electric light survives for a moment in the positive after-image.

There remains one severe question, whether abstracta do not logically or metaphysically *require* their contexts as concreta do not. On the idealist logic of internal relations, everything requires or entails its whole cosmic matrix, but it seems at first sight that even those who deny this extravagance of idealism would have to grant it inconceivable that an abstractum should exist by itself, like the grin left behind by the Cheshire cat, and not as a component of a concretum. This raises first the question how we define "concrete." If it means merely what does exist unconjoined with further components, then it is a verbalism that whatever exists must be a concretum or a component of one. The real question then is whether an entity which is "abstract" in the sense that it is conjoined in a certain concretum with other abstracta, as the shape of a watch is, for example, may be duplicated elsewhere by an entity precisely similar internally but not thus conjoined with anything. Our instincts say "No," that there is a sort of cosmic standard of concreteness, a certain degree of richness or thickness, which perhaps is a general maximum that nothing can exceed, but which at any rate is a general minimum that an entity must attain in order, as the Scholastics say, "to be apt for existence," or that, in Aristotle's phrase, it "can exist apart."³⁰ Plausible though it be, however, that a color or a shape cannot exist by itself, I think we have to reject the notion of a standard concreteness. For it means that from the awareness of even the thinnest abstraction, and indeed the thinner the better, we could *deduce* the presence of the rest of a concretum, if not its specific character then at least that there is a concretum there, as Descartes deduced from a conscious state the existence of a spiritual substance in which it inhered. It seems to me an analytic principle that all deduction must be analytic, so that while any proper component is deducible from its compositum, no compositum is deducible from any of its proper components, and

³⁰ *Metaphysics*, A, 1070b 36.

hence that abstracta must in principle be as independent of their contexts as concreta are.²¹

Though it has been interesting to observe, for its own sake, that abstracta and concreta are much alike with respect to independence and manipulability, this was nearly superfluous for our main purpose because the distinct existence of entities does not in any event depend on whether they are independent and manipulable but only on whether they are *there*. This was the import of our differentiation between constituents and ingredients. The constituents of the universe are not the ingredients of which God made it, if he made it of any, nor the fragments which will supervene when it decomposes, but are the stars and atoms and men, the shapes and tastes and numbers, which are present in it now; and in the same way the constituents of a lollipop, for example, are not the stuffs which went into the kettle, nor the shards which would result from running it through a grinder, but the sectors, the facets, the atoms, the structures, and the qualities which are its current parts and components *in situ*. Hence *a fortiori* our account of things in terms of tropes does not suggest that they were made out of tropes, nor provide a recipe for making more.

As constituents are not created by being manipulated, so they are not made by being noticed, though of course they are made known by being noticed. The processes by which we notice the constituents of things, whether just to distinguish men, the moon, and trees from one another in the universe at large, or to distinguish the smaller constituents, abstract or concrete, within such standard "things," is variously called "analysis," "division," "discrimination," and so forth. "Abstraction" is the kind of analysis or discrimination which notices abstracta (which also are sometimes unfortunately called "abstractions").²² The whole

²¹ There is a correlative question whether there is a lowest level of perfectly abstract entities, "simple natures," at the bottom of the scale, but it does not affect our subject now.

²² Professor Wood is doubtless true to good usage when he says that while "analysis" contemplates a whole exhaustive set of components of a concretum, "abstraction" attends to one of them to the neglect of the rest (Runes, *Dictionary*, p. 3). Stout and Baldwin, in Baldwin's *Dictionary*

topic of analysis is surrounded with dark dissent and confusion, but while the typical allegations against it are in principle as fatal to the admission that a man really has arms and legs, or even that the World All has men in it, as to the thesis that a man's complexion or temperament is a real entity, brute common sense has generally seen to it that abstractive analysis bears the brunt of the critique.

Few persons perhaps would say outright that analysis must literally take its object apart, that where it can't it fails altogether, and that when it does it destroys and belies the object, yet this is in effect what many quite responsible and sophisticated philosophers assume. "Analysis" itself is pure Greek for dissolution; "anatomy" means cutting up; "division," "partition," "composition," "made of," and so forth, all suggest dismantling or putting together. The root meaning of "abstract" as of "pick out" is to take away, so that Mr. Lewis quite innocently could describe an abstractum as "an excised element,"²³ Mr. Blanshard, a bit less innocently, refers to abstracta as "*dissecta membra*,"²⁴ and Wordsworth, with frank malice, charged that "we murder to dissect."²⁵ It is true that the analytic act of attention is sometimes facilitated by operating on the objects. Among abstracta, we may attract a child's notice to the color of a thing by varying the color while keeping the rest the same, or *vice versa*. Among concreta we may sharpen awareness of the discreter parts of a watch or a frog by taking a specimen to pieces. The goal, however, is not a description of the debris but an inference from it concerning the original constitution of the thing and of other things like it.

The critic is perhaps less confused by the actual mayhem incidental to some analysis than by the notion that analytic attention itself literally "makes the distinctions" which it pretends to

of *Philosophy and Psychology*, I, p. 6, had it that while "analysis" considers the relations of a component to the rest of its concurrence set, "abstraction" considers its relations to the rest of its similarity set—a somewhat unfortunate assimilation of "abstraction" to "classification" or "generalization."

²³ *Mind and the World-Order*, p. 66.

²⁴ *The Nature of Thought*, II, p. 483.

²⁵ "The Tables Turned," *Complete Poetical Works* (New York, 1904), p. 83.

discover: it "draws lines," "picks outs," "separates," "isolates." Hence comes the whole notion of *entia rationis* and the like. The supposed implication that the entities thus discerned were not there before their discernment is grounded partly in the general subjectivist maxim that to be is to be perceived, but it is grounded too in the immense overlapping and interlocking variety of distinctions among which the mind can select, so immense that the selection seems even to a realist a little like arbitrary creation. Anything, however, or anything at least which is big enough to be observable, must be analyzable and truly analyzable into innumerable different sets of parts, as our figure on page 9, Vol. VII, as truly consists of the two vertical columns as it does of the three horizontal rows or of the six squares, and similarly for countless other sets of fantastic and filigreed sectors of it which don't happen to coincide with differences of inking. Different interests can fasten upon different sets of parts because they are all truly there to be fastened upon. It is easy to understand how the mind can and must ignore most of the distinctions which actually exist; it is hard to conceive, and it must be rare, that the mind "makes" a distinction which does not exist. In brief, there is no more reason to suppose that we create the constituents we discern, whether concrete or abstract, than that a hunter engenders the tiger he tracks down and draws a bead on; and as any concrete object can and does truly consist of or contain many different sets of concrete parts, so it may also consist of or contain many different sets of abstract components.

Something, of course, happens when we discern constituents, and the frequent phrase that we then "conceive" or "describe" them "in isolation" or "in abstraction from the whole" provokes the illusion that to discriminate an item is to falsify it because it is, as Cousin put it, to "consider it otherwise than it exists." But this is another trick of language. When we take account of a constituent (whether a whole concrete man or an abstract shape) "without its context," we at worst only take account of it without taking account of its context; we not only don't remove it from its context, we never deny the context, and more often we take account of it *in* its context, acknowledging at once their distinctness and their mutual involvement.

General considerations about analysis having left abstracta and concreta quite on a level, without impugning either, we are returned to the purview of ontology with a strong *prima facie* case that the one great obvious difference between abstract constituents and concrete ones which we grasped immediately from examples, and which we indicated by such figurative words as "fine" and "gross," is the only difference, and that this no more warrants a scruple lest abstracta "exist" less truly than concreta do, or "exist" in a queer mode or mitigated degree, or belong to a different "type," than the fact that a horse is more intelligent than a motorcycle but not so fast bestows on either of them a more intense being. It was the idealists again who were mainly responsible for the notion that what is not the complete reality is not completely real, so that the less an existent the less it exists. Yet even by this criterion, which has so little excuse, it is arguable that a big abstractum, such as the pattern of the solar system, might be more existent than a small concretum, such as one's finger nail. The idealists and other holists, at any rate, including the Pragmatists and Peripatetics, and many a common-sense pundit, unduly discredit the abstractum by much overdoing its "thinness." Thus Professor Blanshard summarizes a widespread impression when he belittles abstracta not merely as "*disjecta membra* of nature," but as "withered now and mummified,"²⁴ as if they were like cast snake skins. In fact, of course, they not merely remain staunchly wedged in their concreta; they would not be at all withered or washed out if they could be removed. They are the very stuff of things, as brilliant or urgent as the case provides. The redness of the rose, though not all of the rose, is just exactly all of its real blazing redness. The strength of a girder or the sweetness of a bonbon is a strength or a sweetness, no more, no less. What the complainant has in mind when he thinks abstracta must be withered or washed out is perhaps the rationalistic preference for abstracta which are structures, and especially spatio-temporal structures, rather than qualities. Thus the abstract has been identified with the "form" rather than the

²⁴ Loc. cit., pp. 483-84. Cf. Bergson, *Introduction to Metaphysics*, p. 20: "The concept extracted from the object has no weight, being only the shadow of a body."

"matter"; poetry is sometimes said to be more "concrete" than logical prose because it imparts sensuous quality rather than conceptual structure. Logical philosophers like Lewis and Russell have sometimes used "abstract" to stand for structures, such as the rotundity of a ball, to the exclusion of qualia, such as its redness.³⁷ But whether or not a relational structure is properly called "withered," it is not in our usage any more distinctively an abstractum, and perhaps is not even more abstract, than a quale is.

The adjective "mummified" revives the ancient allegation that the abstract must be static, inactive, ineffective, but nothing of course could be further from the truth. Our ideas of them may be somewhat supine, but the actual strength of a girder is what holds the bridge up; the heat of an atomic explosion scorches a city; and in fact, as we have observed, all of the efficacies we know are of abstracta on abstracta. The rush of a hurricane, a conniption fit, the tempo of a dance, an action, a motion, a hurry itself, are "tropes."

I am with those who believe that the mind is capable of the analytic attention by which a clear understanding of certain sorts of propositions, like some of arithmetic and ontology, eked out perhaps by an example or two, suffices to verify them far better than a great deal of sampling and hypothesizing. Thus I am content with the rudiments of the theory of tropes as instanced by the lollipops; and the catalog of miscellaneous applications and the *exposé* of dialectical doubts about abstracta only confirm for me its aptness and the harmlessness of the opposition. Some will prefer the test of "formalization," to ascertain whether what I have rather defiantly called "the elements of being" can be the values of variables in a neatly logical language. It is easy to shrug off this demand on the ground that no part of such a linguistic construction could possibly be more patent than the presence of tropes in a lollipop, nor the construction as a whole half so patent, and indeed the existence of an entity can in no wise be more affected by whether it can be a value of a variable than the birth of a man must wait on whether the haberdasher has a hat to fit him.

³⁷ See Lewis, *Mind and the World-Order*, p. 115; Russell, *Human Knowledge*, p. 485.

Nevertheless there is a certain macabre interest in the process of axiomatization as a disclosure of some of the systematic properties of our category, and I should welcome such a test.³⁸ A similarly systematic but more philosophical way to put the principle through its paces would be to use it for the grounding and compounding of a whole world view, including a theory of perception and meaning and one of cosmic pattern and destiny. I can attempt neither of these here, but I shall point out something of *what difference it makes*, to the very texture of our thought and the nature of things, that they are composed of tropes.

All the constituents of knowledge, we saw, are by our account of the same ontic denomination; sensations, concepts, words, operations, each of them occurs primarily as an abstract particular, each determines its universal. A concept, whatever else it may be, is not in itself either more "abstract" or more "universal" than a sensation, and while in its use it may signify an abstract universal, it may equally signify a concrete particular—for just these are the two categories of entity which cannot be wholly "present to the senses." There can now at any rate be no ontological mystery about how general ideas are "abstracted" from experience nor how general principles are induced from it, nor how they both apply to and can be true of further objects, concrete or abstract, in experience or outside. Since ulterior objects, if they exist, must be woven of tropes just as the perceptual content is; there is no logical or ontological obstacle to the supposition that our "impressions and ideas" are caused by them and "copy" them. They may copy them by being similar to them structurally, or even by being like them in quality. More than that, however, the perceptual datum may be not just similar to but numerically identical with a component of the object. Santayana and

³⁸ My guess is that a system closely analogous to Mr. Goodman's *Structure of Appearance* would flourish better with tropes as "individuals" or primitive terms than his does with universal qualia in that role (and than Carnap's *Aufbau* with what purport to be concrete particulars). It might avoid, incidentally, his repulsive conclusion that while colors are universals shapes are particulars—as well as James Wilkinson Miller's equally repulsive conclusion, published at almost the same time, that while colors are particulars, shapes are universals ("Logical Dualism," *Journal of Philosophy*, XLVII (1950), pp. 341-53).

Mr. Goodman, for example, thus are wrong that since a conscious datum, a red patch, say, has no further concurrents in consciousness, it can have no concurrents at all.³⁹ It is possible to question that a datum must reveal all of its content; it is not possible to question that it cannot reveal its context—not even whether it has a context. The doctrine of tropes thus accommodates, neither precluding nor entailing, the thesis of neo-realism that the red sensum had when one looks at a rose, for example, is at the same time a member of the mind's fabric and a component of the physical rose, and it explains also why such "direct awareness" of the object after all tells us so little about it. It equally accommodates Russell's theory that a percept though not a *part* of the brain is *in* it.⁴⁰ While destroying a chief incentive to psychophysical dualism by suggesting how the odd apparent immateriality of mental content is mostly, at any rate, its mere abstractness, it nevertheless also accommodates what is essentially the Cartesian theory, that the tropes of the mind, although like those of the body and its environing objects in being abstract particulars, are of remarkably different quality and structure and in fact constitute a closed complex, causally connected with physical processes perhaps, but not overlapping with any and indeed not in the same locatory order with them. Finally, of course, while the theory of tropes reduces the incentive to phenomenalism

³⁹ "An actual appearance cannot be a part of a substance that does not appear; the given image has only the given relations." Thus Santayana, *Scepticism and Animal Faith*, p. 56, and hence the debacle of "Nothing given exists." Goodman, who assumes throughout that *esse est percipi*, decrees by definition that a visual red patch is "concrete" and precludes further concurrents (*Structure*, p. 183, e.g.). Most peculiar, perhaps, is Reichenbach's view (*Experience and Prediction*, pp. 235-36) that it's a matter of "convention" whether a datum has a spatial or temporal position. This is no more a matter of convention, of course, than is whether I am an uncle or in Greenland—but perhaps Reichenbach thinks these are conventional too.

⁴⁰ See *The Philosophy of Bertrand Russell*, ed. Schilpp, pp. 705-706. It is very difficult to state the difference between the theories without the doctrine of tropes, since the direct realist cannot suppose that more than abstract components of the object are shared by the mind, while if abstracta are *ipso facto* essences this is indistinguishable from the critical realist's view that some events in the mind, or brain, are similar to some in the object.

or positivism by satisfying some of their principal motives, notably by accounting for both substances and essences without alleging anything more transcendent than occurrent properties, it is perfectly consistent with those philosophies and as helpful to their formulation as to that of any other intelligible doctrine. The questions at stake among epistemological alternatives are thus adjourned from the high-*priori* venue to the ordinary jurisdiction of evidence and hypothesis. When we have thus seen that the problem of perception is not "insoluble" in some dreadful special way, but only as an ordinary mundane problem is when the current evidence is consistent with too many solutions, we can smile at endeavors to prove it a "pseudo-problem" and to dispose of the "sense-datum language" which is supposed to be responsible for it. For these are as if an amateur detective, at the stage where it is impossible to fasten upon the culprit among a half dozen suspects, decreed that, after all, the properly subtle disposal would be to assert that a murder is an indissoluble whole and that to split it into villain and victim is to be misled by a mistaken verbalism of the lawyers.⁴¹

While our philosophy of tropes is so akin to empiricism in its intentions and apparatus, and though it settles as little as possible by mere armchair analysis, it is an affirmative empiricism which gives the inquiring intellect a purchase on things that the most thorough rationalism might envy. It is only the other side of the same coin that the theory, by taking seriously the idea of the whole and its constituents, declares for the real and literal validity of analysis against all kinds of romantic holism, whether revolutionary or reactionary, linguistic or metaphysical. If our language is not composed of elements which correspond one to one with elements of its objects, it could be and ought to be, and I think that in fact it is. Except for the basest enclitics there are no syncategorematic words, and when allowance is made for accidental vagaries of grammar, the words of a discourse are names which stand substantivally for the several components of the

⁴¹ Though not a refutation, I think this a fair analogy to Professor Black's brief in "Phenomenalism," *Science, Language, and Human Rights*, Symposia of the Eastern Division of the American Philosophical Association, 1952, pp. 21-42.

objects. With language, experience, and things at large thus intelligibly fragmentized and correlated, we can denounce all such fatal barriers to understanding as the absolutism of H. H. Joachim and W. V. Quine—that we know and understand nothing except as we know and understand everything. Our scheme justifies a very skeptical view of the new cults of “appearing” which hope to work a philosophical reformation by substituting for the substantial reference of “there is a red sensum” the arcane internal accusative of “the thing looks red” or the absolute adverb of “I see redly.” It is inimical to the “objective relativism” which transmutes qualities into relations, and into relations irreducible to location and similarity, and is similarly skeptical of all other forms of contextualism. While explaining the sort of interfusion and compenetration of abstracta which called forth the intuitionist metaphors of Bergson and James, it disposes of their misconception that this is a mystic marriage in violation of the laws of logic and the validity of concepts. It obviates also that more ancient principle of obfuscation, the Aristotelian and Scholastic notion that there is a surd element of indeterminateness, non-actuality, and accident in the core of things, and the neo-Thomist idea that there is a prodigious extra bounty and enigma in their Existence.

To take seriously and generally that as the whole consists of its constituents, so it contains its proper parts but they do not contain it, is to guarantee to analysis a real direction. There are real degrees of complexity and simplicity, and corresponding degrees of similarity. There is also a real difference between content and context, so that we had promptly to restore the sharp line, transgressed by the organicist and relativist, between those properties of a thing, like its shape or its color, which are literally interior to it and wholly compose *it*, and those which are relational, like being east of Suez or owning a television set, which literally are exterior to it and not among its components (though among the components of more inclusive things of which it is a part). This is one of the reasons we had no truck with location as a principle of individuation. When therefore we say that a thing consists of its properties, or that one property is contained in another, we mean it, as when we say that a library consists of

books or that a girl is contained in a daisy chain. When we say that it is an analytic truth that Middlesex County is part of Massachusetts or that discs are round, we mean this too: Massachusetts contains Middlesex County and a diskiness actually contains a roundness. To know what "disc" means, and to be acquainted with one disky trope, is to know that it has a round trope as a proper component and that every other disky trope, and its including concretum, will contain a round trope too. The same simple-minded principle, however, which thus makes a part or component deducible from its whole forbids anything else to be deducible from anything. Part does not depend on part, nor whole on whole, nor part on whole, and that whole does depend on part is so for the trivial reason that the whole is at least the sum of its parts.

It will help a little in conclusion, not so much to justify the theory of tropes as to explain it further, to consider briefly the anticipations of it in current and classical philosophies. It is a natural child of the modern and empiricist view that a thing consists of its properties, or "is the bundle of its characters," from which it varies by making explicit that this does not mean that the thing consists of *universals* (as about two-thirds of its champions have asserted) nor that it consists of its *appearances* (as a different two-thirds have assumed). The distinction between the abstract and the universal is half admitted when with Strong and Carnap it is admitted that universals can be concrete.⁴² It was remarked explicitly by H. W. B. Joseph,⁴³ was taught, I am told, by William Savery, and is an implicate of a distinction between two phases of "abstraction," to wit, "isolation" and "generalization," recognized in Heinrich Schmidt's ingenious little *Philosophisches Wörterbuch*.⁴⁴ The theory appeared in full bloom in the writings of

⁴² C. A. Strong used "concrete universal" in our sense in his "On the Nature of the Datum," *Essays in Critical Realism*, p. 231. Carnap's "Q-predicates" are concrete universals (*Logical Foundations of Probability*, pp. 124 f.). But both Strong and Carnap suppose that universals of whatever complexity must be corporified by attachment to particular kernels of an ontologically different order.

⁴³ *Introduction to Logic*, p. 34.

⁴⁴ *Op cit.*, p. 11. I have heard it stated independently by Dr. Dickinson S. Miller. "Isolation" without "generalization" is suggested

G. F. Stout already mentioned,⁴⁵ but my version of it was more affected by Professor McGilvary's "Relations in General and Universals in Particular."⁴⁶

Professor Benjamin's "abstract occurrents" are tropes,⁴⁷ and while such Cantabrigians as Johnson and Broad have been wary of the word "abstract" in this connection their view that there are "two fundamentally different kinds of particulars, viz., occurrents and continuants"⁴⁸ falls short of the theory of tropes chiefly by loyalty to a vague and old-fashioned philosophy of predication. Many of the "modes" and "essences" of Descartes and Spinoza, and especially the simple ideas and sensible modes of Locke, since they certainly are not concreta though energetically denied to be universals, must be, if sooth were said, abstract particulars.⁴⁹ Theories which officially identify the abstract with the universal

by Mr. Lewis' esthetic abstraction, *Analysis of Knowledge and Valuation*, pp. 475-77, but that is apparently not quite what he means. It is certainly the message of James, *Principles of Psychology*, Vol. I, p. 473, where he rejects Dewey's assumption that "an abstract must *eo ipso* be a universal."

⁴⁵ See footnote 8.

⁴⁶ *Journal of Philosophy*, XXXVI (1939), pp. 5-15, 29-40. McGilvary however tried to combine his doctrine with an objective relativism to which I think it ill-suited. Our idea that an abstractum can be a particular must not be confused with either of two similar sounding opinions: (1) the proposition, correct enough in itself, that every property occurs in a perfectly determinate value, an exact color, an exact shape, and so forth; (2) the proposition, by which Whitehead and Santayana, for example, tried to narrow the gulf between universal and particular, that a universal is just the particular universal it is (Whitehead, *Science and the Modern World*, p. 229, and *Process and Reality*, p. 76), or is "individuated internally, by its character" (Santayana, *Realms of Being*, p. 36). These are compatible with the most extreme logical dualism. Sir William Hamilton seems near to the trope theory when he remarks that the humanity of Leibniz was different from the humanity of Newton (*Discussions*, American edition, p. 630), but I am not sure whether he means different in case or different in kind.

⁴⁷ A. C. Benjamin, *The Logical Structure of Science*, pp. 73-74.

⁴⁸ C. D. Broad, *Examination of McTaggart*, I, p. 139. See specifically the idea of "reddings" and "greenings," *ibid.*, pp. 164-65.

⁴⁹ Such, for example, must be "the coldness and hardness which a man feels in a piece of ice" (*Essay Concerning Human Understanding*, Book II, Chap. ii, Sect. 1), and so on for the "sensible qualities" so much affected by all who profess to combine empiricism with nominalism.

ever and again, almost inadvertently, admit abstract particulars. The "neutral entities" which the neo-realists borrowed from James's ideal of "bits of pure experience" were described by E. B. Holt as universals,⁵⁰ but they more often played the role of tropes. When Dawes Hicks wrote that sensible appearances do not *have* but *are* characteristics he meant that they are universals,⁵¹ but when he tried to interpret Moore to Stout he suggested that all three of them believed that when two concreta have the same quality they contain two "examples" of it.⁵² Even Santayana's essences, when particularized by the acquisition of external relations, must fall into our category.

In a guarded way, Samuel Alexander's theory of universals seems to identify them with sets or sums of similar tropes,⁵³ and so, oddly enough, does the Aristotelian doctrine of embodied forms, that similar but numerically distinct humanities, for example, are present in all men.⁵⁴ The latter insight, however, was dissolved in grotesquerie by the notions that there can be only one such neat particular form in any individual, that it exists

⁵⁰ Holt, *The Concept of Consciousness*, passim. Experience, said James (*Essays in Radical Empiricism*, p. 27), "is made of *that*, of just what appears, of space, of intensity, of flatness, brownness, heaviness, or what not." These sound like essences, but he doubtless would have preferred their diagnosis as tropes.

⁵¹ *Critical Realism*, p. 77.

⁵² "Are the Characteristics, etc.," p. 124; my emphasis.

⁵³ *Space, Time, and Deity*, I, pp. 208 ff.

⁵⁴ Russell, *History of Western Philosophy*, pp. 166-67, mentions this as a revolutionary idea which Aristotle might have utilized, but it is, I think, the canonical interpretation today. Certainly it is the Scholastic version, though usually rather surreptitiously expressed. Thus Maritain (*Introduction to Philosophy*, pp. 172, 206) tells us that the "quiddity" *in re* is neither universal nor particular. He presumably means only what James meant by "The conception of an abstract quality is, taken by itself, neither universal nor particular" (*Psychology*, I, 473), namely, that it is not intellectually docketed one way or the other. But this of course does not prevent its *being* a particular all along. Russell might seem to adhere to the theory of tropes when he writes of "particular noises" susceptible of proper names, "Tom" and "Dick," etc. (*Inquiry Into Meaning and Truth*, p. 36) and declares that qualities are "particulars" (*Philosophy of Bertrand Russell*, ed. Schilpp, pp. 685-86, 698, 714), but in the upshot I think he thinks that all is universals, called "particulars" only for the reason Goodman's are called "individuals," that they are the values of his variables.

there like a metaphysical pearl in a mire of accident and ὕλη, that it is not "abstract" until it is literally *abstracted*, that then it is a universal of the sublime immaterial Platonic order, and that the Active Intellect actually performs this transubstantiation. Professor Demos tells how Plato himself distinguished between the rational Form, which is the true prototypal essence, and the empirical form in the concrete instance.⁵⁵ It is very difficult, finally, to be sure of more than a verbal difference, though of some importance still, between our thesis that the world consists wholly of absolute particulars, linked piecemeal by a unique nexus of similarity, and an immanent realism for which the world consists wholly of *universalia in rebus*, linked thingwise by a unique nexus of compresence or togetherness. To see that a thing is exhausted in its abstract components is more than half the struggle.

The most that can be done by a thesis in "first philosophy" like ours is to prepare the way for more concrete and synoptic inquiry. We are only beginning to philosophize till we turn from the bloodless proposition that things in any possible world must consist of tropes, to specific studies of the sorts of tropes of which the things in this world actually consist. It is a virtue of our thesis that it does not strangle or eviscerate the great problems in the philosophical cradle but keeps them alive and ready for the legitimate judgment of experience and logic. It will be a further virtue if it assists, as I think it will, in their formulation and appraisal. Are there only physical objects and energies, or only minds or spirits, or are there both? How, specifically, is a physical object constituted, and how a mind, and how are they related? These topics of gigantic hypothesis are the last of philosophy for which the first is made.

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⁵⁵ "Note on Plato's Theory of Ideas," *Philosophy and Phenomenological Research*, VIII (1948), pp. 456-60.

THE NATURE OF TRAGEDY

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TRAGEDY preserves the form of ritual and the frame of myth at the same time that it treats of the relation between the human and the divine and the nature and meaning of human transgression, themselves the concern of religion and philosophy. But at the same time tragedy gives a distinct presentation of life that stands over and against ritual, religion and philosophy and that cannot be reduced to or integrated within a mythical, religious or rationalistic frame. Tragedy focuses on a single action, which develops complete and self-enclosed from its own inner causality; it isolates a concrete instance, through which man's entire universe must pass as through the eye of a needle.

Because tragedy offers a total interpretation of life, the tragic view may be considered as an *alternative* to the mythical, philosophical or religious interpretation. In Greece, tragedy superseded ritual as a form of communal cultic expression. Plato defined the philosopher's task in opposition to that of the tragic poet and recognized a rival philosophy in the tragic view. The awareness of the incompatibility of tragic and pious attitudes is acute in religious thought where a tragic interpretation of theological doctrines is branded as heresy.

The aim of this paper is to outline some of the basic premisses of tragedy in contrast with those of ritual and religion. A detailed comparative analysis of the concept of the hero and of the problem of transgression in tragedy, myth, ritual, epic, religion and philosophy, is clearly beyond the scope of an essay. I wish here only to indicate the course such an investigation might follow, confining myself to the comparison of tragedy with ritual and religion.

Tragedy is a form in which a given society may find the ultimate expression of its particular consciousness. And because not every age understands its problems in tragic terms, or attains self-understanding through any single medium, be it religious,

theoretical or artistic, tragedies are not created at all times and under all circumstances.

The Baroque theatre of reason, the romantic stage of passion, as well as the modern social and psychological problem plays, whether in the naturalistic or in the experimental vein, represent types of serious drama, which do not, however, attain the specific dimension of tragedy. Francis Fergusson has well described in detail the deterioration of the theatre in the ever narrowing frame of rationalism and naturalism. "Since the destruction of the great 'mirror' of the Elizabethan theatre, it has been necessary to restore or invent the theater; and modern drama has been a succession of more limited *genres*, based upon more limited postulates about human life, like Racine's 'action as rational' or Wagner's 'action as passion'."¹

In the drama of social criticism or of character analysis, in the drama of the mysticism of passion, and even in Racine's drama of the triumph of reason over instinct, the materials of the theatre are employed for fundamentally different ends than in tragedy, and in each instance there is a different vision of that dimension of human action, its ground and horizon. The present discussion therefore confines itself to the Greek and the Elizabethan theatre, which formulated, each in its own idiom, the tragic consciousness of their respective periods.

The definition of "tragedy" cannot be derived from purely aesthetic considerations, but requires a metaphysical approach. Thus, although a "tragic rhythm" may be discerned in the formal composition of a play like Ibsen's *Ghosts*, the tragic principle is denied. For Ibsen's social dramas assert that if only men could free themselves from a crippling and often hypocritical sense of duty and "be themselves" they would escape disaster. Tragedy, however, presents the inevitable disaster. Tragedy may indeed point to the need for restraining individual passion and correcting traditional mores. But its note of warning is not a critique on either traditional or individualistic grounds, nor on rationalistic or theological premisses, but always within the larger context of a universe where domains that equally claim man's loyalty come

¹ Francis Fergusson, *The Idea of a Theatre*, pp. 109-10.

into opposition, and where the good attainable to man is an always precarious balance of contrary forces.

The tragic stage is a balance where human action is weighed, where man's will is measured against the working of the gods, meaning against futility, order against chaos. The scales see-saw and waver mid-air about the ideal point of equilibrium. Should the entire weight of the issue fall on either side, we should be left with a world where man is either utterly enmeshed in a web of divine-demonic causation, or where man stands alone as the ultimate source of his actions. We should be left either with a world whose order and meaning are eternally and immutably established, or a world without bounds or stability, void of meaning; in a world where suffering and death are meted out according to a strict plan of justice, or a world of sheer wanton hazard where human reason is bowed before absurdity. In either world man would not experience his situation as essentially tragic. For tragedy means that the relation between man and the noumenal sphere, upon which his survival and happiness depends, has become uncertain, conflictual, strained to the limit, and can be expressed only in terms of contradiction and paradox. Man does not enjoy certainty and assurance either in divine authority or in his own autonomy; he is dependent on the gods but he can no longer count on them.

The tragic play balances perilously between the extreme poles of hope and nihilism. Man is still a member of a sacred order, but the noumenal world has become incomprehensible and full of menace and no longer assures him of an ultimate harmony. The traditional frame will not hold up under the stress of discordant forces, and man, subjected to conflicting demands, is thrust before a choice and for the first time confronts the gods questioning and defiant. Human action tends to become tragic whenever the "time is out of joint," the oracles grow obscure and even treacherous; human action becomes tragic whenever the divine order loses coherence so that man, misreading the signs of heaven, becomes the instrument of his own destruction. Thus, Oedipus, contriving to outwit the oracle falls subject to its monstrous design; Macbeth, caught in the wheels of ambition, misses the point of

the witches' prophecy, and the gods' ruse turns Alias' scheme to avenge his wounded honor into a way to dishonor him.

In Shakespeare's tragedies the dividing line between the demonic and the human world is indistinct. The gods remain vague, hidden and undifferentiated; at the fringe of the cosmic order, their domain seems to prolong itself into the realm of human passions. There is a deep affinity between Lady Macbeth and the Weird Sisters; she becomes a continuation of demonic workings on the human plane. And even though Shakespeare may provide us with individual psychological motivation for some of his characters, the villainy of men like Iago and Richard III has its source in hidden forces of evil beyond man's ken and relates them to a demonic world beyond their individual motives. The roots of human passions reach deep into the soil of mythical potencies, the disintegration of cosmic harmony expresses itself in Lear's madness, and man sees himself involved in an action that, though essentially his own, begins and terminates in a noumenal order.

A later day enlightenment will be tempted to interpret the gods, ghosts, spirits and oracles of tragedy as mere dramatical devices. Viewed from a rational point of view, tragedy appears as an early attempt to represent man's inner conflicts in the guise of a struggle between mythical powers. However, although the theatre tends to re-interpret man's struggle amidst divine forces more and more in terms of human psychology, at the high period of tragedy the locus of the drama was still cosmic. The action was played on that ideal plane, where the domains of the human and the divine meet, are held in tension because irreducible to one another. We should be mistaken, therefore, if we tried to interpret the divine powers in the plays of Aeschylus, Sophocles or Shakespeare, as allegorical symbols for psychological realities. In the beginning the oracle sounds from a realm beyond the human psyche; divine purpose remains distinct from human will. Choice by tragic irony falls into the pattern of fate, but fate does not thereby become the source of choice, nor choice of fate. The powers behind man's destiny and man's personal motives belong to two distinct and independent orders that cross and interplay to yield a single dramatic action.

The experience of the demonic, destructive aspect of the gods

underlies both tragedy and ritual. Therein the tragic and mythic consciousness show a deep affinity in contrast to the religious attitude that conceives the noumenal realm in the form of a personal god, essentially benevolent and solicitous for the good of mankind. In the frame of ritual man stands in awe before the gods and tries through sacrifices, prayers and the observance of taboos to placate the demons and control the noumenal sphere. His attitude is that of appeasement and circumvention. He bows before the gods and tries by magical means to keep them within certain bounds.

The ritual world does not distinguish between human and divine agencies; every action is ultimately traced to a noumenal cause. In the ritual drama there are no human actors, and man enacts the role of the gods. For it is the gods and not man who finally decide about everything. The ritualistically defined universe is subject to a causality as rigid as that of natural science; if a prayer or sacrifice fails to achieve its desired end, the failure is attributed to some oversight in the performance of the ritual; the efficacy of the ritual itself is never questioned. The dimension of ethical freedom, individual decision and responsibility has no place in the ritual pattern.

The origins of tragedy can be traced to cultic practices. The ground for the tragic theatre was prepared by the merging of an epic and a cultic tradition, or, in Nietzsche's phrasing, through the union of the Apollonian and the Dionysian spirit. Nietzsche's insight into the relation between tragedy and the cult of Dionysios has to a large extent been confirmed and elaborated by the recent mythographic studies of Gilbert Murray and Jane Harrison. Literary critics like Kenneth Burke and Francis Fergusson have followed up the lead and produced detailed analyses of Greek, Shakespearean, as well as modern tragedies on the basis of the ritual pattern. While such studies have been able to refer the formal elements of tragedy outlined in Aristotle's *Poetics* to corresponding phases in the ritual drama, they fail to ask, what is it that converts the *agon*, *anagnorisis*, *threnos* and *peripeteia* into specifically *tragic* categories. It is true that the drama derives from mimetic actions of an originally sacred character and that, moreover, a ritual pattern of sacrificial purification may be discerned

in the structure of even some secular tragedies. But it remains to be asked whether ritual action contains the principles of tragic drama beyond providing the formal situation which is then converted to quite different purposes—whether the difference in intention as well as in complexity between ritual mimesis which end, in identification and the tragic mimesis which employs it as a means, is not as striking as the similarity.

Tragedy, while preserving the form of dramatic enactment of ritual and continuing to assert man's dependence on noumenal powers, centers the drama around the human protagonist, who confronts these powers no longer in abject terror, but questioning and defiant. However the element of fate may dominate the action, the tragic play is set in motion by man's questioning and protest, as he assumes the burden of his fate in the full awareness of his freedom. But for Oedipus' stubborn determination to unearth his origins despite Jocasta's pleas and the warnings of the chorus, but for the resoluteness of Electra and Antigone, or Macbeth's decision to carry out the witches' prophecy against the dictates of his conscience, there would be no tragedy.

The spell of ritual participation is broken once the stage is set for tragedy, and we witness the spectacle of human actions, of man himself deliberating, contriving, probing and holding his ground against the gods. Man steps out of the magic circle of ritual to contemplate his state as an objective spectacle, to weigh his alternatives by human standards, and to argue his case before the powers that may be. It is man who speaks on the tragic stage; before only the gods spoke, or the group invested with the gods' authority. Even the Homeric heroes tend to execute the gods' design, directly, without questioning; but in the drama for the first time a moment of pause, tension and reflexion slips in between the divine counsel and the human deed. The tragic *agon*, unlike the ritual contest between divine powers, introduces a strictly human plane of reality and involves phases of reflection and decision that spring from man's individual autonomy. The stage provides a neutral arena where independent units confront each other in free debate. The gods may crush man or come to terms with him, but they cannot overawe him.

In the theological plays of Aeschylus, man's tragic plight is

harmoniously resolved within a cosmic frame, which, however, is no longer the traditional frame of myth and ritual. The haunted matricide is absolved from his guilt and reintegrated in society through a divine intervention, which asserts the superiority of the patriarchal bond and subdues the chthonic demons into sisters of mercy. The bound Titan—so commentaries on the lost parts of the Prometheus trilogy would lead us to believe—will be reconciled with his Olympian adversary. Though the plays of Aeschylus offer moments of supreme tragic passion and insight, in the overall drama, tragedy, freed from ritual, yields to a new theodicy. The tragic situation is not the end; it is but one phase in the larger design of the gods. Though the divine order is strained and man is put before violent alternatives, his protest meets with divine response, and the final sphere of realization opens not into nameless terror but into a divine understanding.

The end of tragic action, however, is not essentially the reconciliation of opposites. An "unhappy" ending is the most appropriate for tragedy, as even Aristotle claimed. The accent on catastrophe may serve as a characterizing sign of the tragic situation as such: a situation which by its very nature excludes a solution, which encloses and isolates the hero within its limits and permits no way out. The ideal tragic situation drives the dramatic movement ineluctably from the plane of action to the plane of suffering and finally to the plane of knowledge. The problem it originally posed cannot be resolved on the plane of action but concerns precisely the causal connection between the several planes of action, suffering and knowledge.²

An adequate definition of "tragedy" is so difficult because the tragic position is essentially unstable, a dynamic tension *between* alternate positions. And while we should not restrict tragedy to

² Cf. Kenneth Burke, *A Grammar of Motives*, pp. 38 ff. Tragic action is a purification where the hero is at once the cause and the carrier of an impurity and the agency for its removal. There is tragic action only where there is this causal connection whereby the doing, the suffering and the knowing are related in a single action. Where the action terminates in the deed (most epic actions), or where the suffering does not produce insight (e.g. Lady Macbeth), or where the suffering is not founded on doing (all innocent suffering, e.g., Job, Ophelia), the particular action is not tragic.

the very few works which attain or almost attain this ideal balance, we must take the ideal as our point of departure for our understanding and evaluation of works where the scales tend to tip toward one or the other position.

In the tragedies of Aeschylus man has already emerged as a free agent, plunged in contradiction, questioning divine order and protesting against injustice; but the human plight is resolved within the divine harmony. The old ritual ground becomes the stage for human passions and a place for social and religious criticism, where the old gods and the old conventions are challenged by new forces. The dramatic movement initiated in the archaic theatre leads to the classical theatre of Sophocles and finally to the naturalistic theatre of enlightened skepticism. In the works of Euripides, there is yet the shadow of a cosmic frame of reference, but the divine order has crumbled, the gods tend to figure allegorically and the struggle between the conflicting passions and interests of individuals tends to take over the stage.

The new type of reflective consciousness, whose breakthrough in the archaic world order created the occasion for the tragic theatre, soon outgrew the tragic frame. The spirit of free inquiry, once set in motion, speeds on to question the last presuppositions of the mythical frame, and thus to challenge the tragic position which stands with one foot still in the old order. The philosopher emerges to wage war against the tragic poets.

Aristophanes, satirizing the decline of the Athenian theatre, held the sophistic spirit and growing rationalism of his age responsible for the poisoning of the theatre in particular and of society in general. Indeed, he refers explicitly to Socrates as he warns the young poets to shun the sophistic circles, lest they, like Euripides, learn to mix reasoning with art. Aristophanes' views on the decline of tragedy from Aeschylus to Euripides, initiated a tradition of literary criticism that enjoyed a passionate revival in the German romantic movement. The romantic diagnosis of the causes of the decline of tragedy may be correct. Yet the critics who celebrate in the early tragedy the expression of a golden age of innocence before man's soul was ravaged by reflection, fail to see that the forces of enlightenment they bewail are set in motion in the very birth of the tragic theatre. The crisis of the archaic

mind already marks the tragic consciousness; tragedy is in part a reflection of this crisis. The world of uprooted individualism, skeptical, if not cynical in its outlook, has no place for tragedy. But neither does the golden age of myth.

Tragedy usually marks a transitional phase of consciousness; in Athens the transition from an archaic consciousness to a speculative, both skeptical and mystical, spirit. Similarly Elizabethan tragedy flourished in a time of instability, quest and expanding horizons, between the dissolution of the Mediaeval cosmos and the crystallization of the Puritan mind in Milton's *Paradise Lost*, where the human drama is viewed as a theodicy rather than as a tragedy. Rational and religious attitudes may supersede the tragic, but this does not imply, as Plato's and Hegel's philosophical critiques of tragedy have argued, that the new stage of consciousness transcends and invalidates the tragic position. The archaic, tragic and rational stages of consciousness do not give a progressively "truer" interpretation of the human situation; each formulates and resolves the question from its own basic experience, and is valid in its own right.

The Promethean theme of man's struggle against the gods is the central motif of tragedy. From Aeschylus to Shakespeare a note of protest dominates the tragic view, however muted in the final choral hush. Man protests against a universe where basic passions and loyalties clash and cannot be ultimately reconciled, where he must choose between evil and evil—a universe where demonic workings obscure the last clear-cut distinction between right and wrong—and where the gods conspire against man to make him an agent of their destruction. In tragedy the old gods of myth and ritual, that reason and monotheistic religion have only temporarily subdued, rise again to threaten the order of man's cosmos. There is a theological and a tragic version of man's protest against divine injustice, and in each instance the premisses and the conclusion of the drama are different. A comparison between the story of Job and the *Prometheus Bound* of Aeschylus will show some of the more striking differences between the tragic and the religious spirit. The difference may be gleaned at once by contrasting Job's final, "I know that thou canst do all things . . . Wherefore I abhor myself and repent in dust and ashes,"

with the, "Behold me! I am wronged," of Prometheus. The comparison holds, I believe, even in view of the fact that *Prometheus Bound* was followed by another part which probably showed the reconciliation of Prometheus with Zeus, for such a "happy ending" would imply that the two adversaries came to terms—something quite different from Job's total surrender to the Almighty.

Job is only a *passive sufferer*, an innocent victim of a divine plot; his suffering is not the consequence of any *action* on his part, any crime or act of defiance he has wittingly or unwittingly committed. He is a man afflicted for he knows not what, who has finally no issue with God, no positive counterposition, but who, conscious of his innocence, simply questions the justice and would like to know the reason for the incomprehensible calamity that befell him. In the biblical frame, even Job's so humble plea for a hearing is made to appear terribly bold. Job asks for justice, but he does not for a moment doubt God's omnipotence or set his will against God's: "Though he slay me, yet I will trust in him."

Quite different is Prometheus' attitude toward Zeus. On the stage of Aeschylus, the protagonist of humanity faces heaven with defiance and enters into contest with the most powerful of the gods. Prometheus has chosen the part of man against god, he steals fire from heaven to aid humanity and becomes a hero first through his transgression and then by suffering his punishment unbowed, defiant, claiming an insight into a fate hidden from Zeus himself. In the Bible story, God's final appearance in the whirlwind persuades by its very failure to explain anything, that is, by its sheer overawing force. It confirms what was assumed throughout the discussion: that the Almighty stands beyond the canons of human justice, and that the creator and ruler of the universe cannot be called to account by his creatures. The story of Job plays within an ironcast theological frame, whose reality is never questioned, but on the contrary, persistently stressed. Job's temptation is finally a trial of endurance. God heaps calamity upon calamity upon the head of an innocent man simply to test his fidelity. Job stands the test and is doubly rewarded in the end. In contrast, the Promethean struggle plays under a neutral sky; there is no ultimate court of appeal, the combatants

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face each other in an open arena bounded only by an impersonal power of fatality. The neutral horizon is in fact the very pre-supposition of a tragic contest; the tragic drama emerges first when the players contend with each other on their own, and their conflicts can no longer be kept within the bounds of any system of pre-established harmony.

Both tragedy and religion are concerned with man as an agent of evil and give an interpretation of man's transgression of the divine order. But where religion interprets transgression in the light of sin, and distinguishes sharply between its saints and sinners, tragedy presents transgression in the light of heroic grandeur. Whether in the Greek or in the Elizabethan theatre, the great tragic heroes are the great offenders. The hero's transgression often reflects a contradiction in the cosmic order itself. The hero may be driven to break the law in one sphere in order to fulfil it in another. Thus Prometheus' revolt against Zeus is in the name of a new era; Orestes offends the sacred blood ties in obedience to the law of Apollo; Aias, Oedipus and Macbeth are guided by divine, or demonic, oracles; Antigone opposes the law of the polis in the ground of a higher divine law. Or as is often the case in Shakespearean tragedy, pride, passion or folly blinds the hero to the true state of things and renders him destructive (e.g. Lear, Hamlet, Othello).

The tragic interpretation of transgression in the light of heroic grandeur presents a problem to a religious or rational consciousness as perplexing as the much discussed question of how the hero's suffering and downfall can be the source of aesthetic and ethical pleasure. The two problems are inseparable. They arise when we fail to consider tragic action as a whole. Transgression and expiation through suffering and final insight, even if at the price of death, jointly build up the heroic grandeur of the action.

Tragedy presupposes a universe where, though the individual is free and responsible for his actions, evil is a positive reality and represents a trans-ethical, substantial sphere. Both religion and philosophy are grounded on the faith in the universality of a single principle, whether an ultimate rationality or an omnipotent god. They tend to suppress any independent sphere of being which defies either reason or divine nature, and tend therefore to explain

evil as a negative attribute, a privation in man's reason or will.

Tragedy shows that he who transgresses the line that separates man from the gods gains a profounder insight into their relation. If we insist, as we must from a religious point of view, that Macbeth should have known what a man may or may not do, and that he should have ignored the witches' prophecy and walked in the way of righteousness, we will have also to say that Macbeth presents only an example of moral downfall, in itself unnecessary and wasteful, but hardly tragic. We are arrested by pity and terror before the spectacle of human transgression that is neither accidental nor due to man's depravity, but whose cause lies so deep in man's nature and what is noble in it, and is bound so inextricably with his condition and aspirations, that it can never be suppressed or conquered. Our pleasure is not in a man's suffering, but in the entire chain of events set off by the hero's transgression, and culminating in his downfall, which assures us that there is a final limit to destruction.

In Oedipus, Aias, Macbeth, Othello, Lear we are arrested by the tragic spectacle from beginning to end; first, because we believe that forces more ancient and powerful than man's will prompted his transgression, and lastly, because the hero's insight into the forces that destroy him, though tragically too late, raises him above them. In his defeat man emerges more noble than the powers that led him astray. Tragedy leaves the outcome of the combat in suspense, for victory belongs to neither and to both and to each in his own domain. The paradoxality and thus the fascination of tragedy consists in sustaining the alternatives in a perilous balance that leaves the door open to nihilism as well as to faith.

Tragedy presents man at once under the power of demonic forces and in protest against them. It asserts that evil and chaos shall break through and that the gods shall have their victim, if not this man then another. Men like Oedipus, Macbeth and Lear are chosen, and they accept and become heroes through their acceptance. The hero takes the lightning upon himself, not as an innocent scapegoat but as the agent of its destructive power. The tragic hero, usually a king, and as such representing the order and unity of man's kingdom, becomes the instrument whereby

the caprice and madness of the gods strikes into the heart of human society. The hero stands alone and confronts the powers that seduce him, without the support of an all-powerful and just god or an absolute ethical code. In the background of the tragic agon only the murmur of human society is heard, the chorus of prudent and pious public opinion. This represents man's small sheltered life and survives the hero.

The tragic plane of action is trans-ethical; the ethical sphere is seen as a cosmos bounded on all sides by chaos and constantly threatened by the break-through of elemental forces. The hero mediates between the two orders, between the human sphere whose rules and restrictions make civilized existence possible and the more ancient realm of lawless desires that ultimately nourish man's little well-organized cosmos, but which, if not properly channelled, can also destroy it. The hero is a man who, by transgressing the line that separates man from the gods, brings chaos and ruin into human society, and who must die in order to restore its harmony. The function of tragic action, as Aristotle pointed out, is one of purification and not that of an example. Tragedy is not a morality play; our part is not to follow or even to avoid the hero's course. It is best to assume the attitude of the chorus: honor and lament the hero and pray that his tragedy should not be ours. Tragedy thus presents human action with a sacramental rather than a didactic intention. Thereby it preserves to some extent the emotional function of ritual, but on different premisses and with another message. In ritual one order of gods was conquered by another; in tragedy it is human insight that both loses and triumphs.

From a religious perspective the tragic view seems hopeless because it posits an amoral universe and does not recognize a god to whom man can appeal for both justice and mercy, by whom he could be absolved from his guilt through repentance. Repentance is meaningless before an indifferent and even hostile universe. Shakespeare's heroes do not repent their transgression but simply suffer it as a disease. And yet there is a hope implicit in tragedy, though quite different from the religious faith of salvation through a god. The great tragic heroes are men of violence, and they fall through their violence. Why must the hero who

heeds the demonic oracle end in disaster? That he inevitably does so, points to a faith in the perpetual restoration of the human order. The hero is dead and the land ravaged by the outburst of lawlessness, but society remains, and order and justice are not destroyed. Where men lose faith in the order of society as such, tragedy dissipates into nihilism and the hero's action and suffering becomes meaningless (e.g., *Trojan Women*, Shakespeares' *Troilus and Cressida*, Webster's tragedies). Tragic action has meaning and value only in reference to a just and lawful society whose order it threatens but does not negate. Once all order is negated the hero's action becomes submerged in the chaos it generated.

Tragedy ends on that note of calm and sober grief that follows upon great natural calamities. The hopeful message of tragedy is that though evil is irrepressible it is not endless, that human life has meaning and dignity, though the odds are against man.

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CONCERNING THE ONTOLOGICAL ARGUMENT

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THE ontological argument, in many quarters, has become a matter of derision.¹ It is doubted whether there is anything in the history of the argument that can be salvaged. If the argument is such that it can be dismissed by a jest, then it would seem to be merely an historical curiosity, a bit of the debris of the history of ideas. One would then wonder why great thinkers took it seriously. But it seems probable that the argument, as understood by those thinkers, involves many conditions that the usual brevity of statement does not make explicit.

For the materials of my discussion, I fall back upon Descartes. This philosopher demonstrates the existence of God in his Third Meditation. The ontological argument, however, is given not in the Third but in the Fifth Meditation. It is there expressed in a curious manner. It would seem, to go by literary expression, that he at this point unexpectedly thought of the argument, stumbled upon it, as it were. "Of the essence of material things, *et derechef, de Dieu, qu'il existe*"—and again, of God, that He exists. The title is in itself provocative. We are told of the essence of material things. The consideration of quantity, of extension, leads to the recognition that size, shape, position and motion can be distinguished with respect to the body to which we attribute extension. Thus he is led to, or at any rate introduces, a doctrine of essence. There is an infinity of ideas that are forms, essences, or determinate natures, immutable and eternal. Most significantly of all, these determinate natures have not been invented by me, says Descartes, and do not in any way depend upon my mind. After one more paragraph there follows the ontological argument.

It can scarcely be maintained that the literary presentation

¹ This paper was presented as the Presidential Address, Southern Society for the Philosophy of Religion, on March 6, 1953.

represents a discovery of the moment. The ontological argument had been expressed in the fourth part of the *Discourse*, published years before the *Meditations* were written or at any rate published. Descartes, then, was in possession of the ontological argument when the Third Meditation was composed. There must be significance in the fact that the ontological argument is not explicitly stated in the Third, and is reserved for the Fifth where it is introduced by a doctrine of essence as if this doctrine served to disclose the ontological argument. Something more than a mere literary device is suggested. In the Reply to the Objections of Caterus, moreover, Descartes reports that he had had some hesitation in using the ontological argument because those who do not keep in mind all of the considerations that condition it may take it to be a sophism.

The texts preceding the ontological argument seem to involve several conditions upon which its enunciation depends. There is, first of all, a mind, a thinking thing: Descartes' or yours or mine—in short, mind. There are, secondly, eternal forms, essences or determinate natures. With respect to these, the most important fact seems to be that they are not invented by this mind. Within each such nature there is a structure or constitution, and if mind grasps, discerns or apprehends some features of this intelligible structure, it is compelled by the natural light to acknowledge that these features are constitutive of the non-invented nature. The determinate nature, so to speak, dictates to mind what it must acknowledge concerning it. There is a necessity within the nature, and this can become manifest to thinking things. I can but bow before its decree. It is then no invention. This is the independence of the eternal nature.

To avoid verbal ambiguities, I propose to say that such natures in their independence are *apprehended*, and that as a result, by literary license, I or the thinking thing may be said to "have" a clear and distinct idea, or to be perceiving something clearly and distinctly. There appears to be a third factor involved in the paragraphs preparatory to the ontological argument. It is that "my" mind or, more exactly, a possessor of mind, while

clearly and distinctly conceiving an apprehended nature, cannot but accept it as true.²

After these few paragraphs, there appears the ontological argument, almost casually, as if the author were telling the story of a succession of meditations, and the ontological argument were an unanticipated discovery of the fifth day. If I can draw from my thought the idea of something, he says, and if from this alone it follows that everything I recognize clearly and distinctly to belong to this thing does really belong to it, can I not draw from this an argument and demonstrative proof of the existence of God? The startling fact here is that the question concerns a *demonstrative* proof. Descartes does *not* say: if mind apprehends the idea of Perfect Being, then the possessor of mind cannot resist believing that such a being exists. The matter concerns, not the belief of inclination, and not rational conviction,³ but coercive proof, unless it be the case that such coercion and rational conviction are one and the same.

Reverting now to the Third Meditation, it should be observed that Descartes tells us what is the force of its arguments. The whole force, he says, depends upon a recognition. I recognize that my nature cannot be what in fact it is—finite and imperfect—and have the idea of God, if God did not veritably exist. The point is repeated emphatically in a reply to objection. The mind in fact does apprehend the idea of Perfect Being. Its inner resources must be adequate for the achievement. Its capacity to

² In the Fifth Meditation, after the paragraph referring to non-invented natures, there follows a paragraph in which it is contended that the very nature of "my" mind is such that I cannot help believing things to be true while they are distinctly and clearly conceived. This must be distinguished from the natural inclination (*une certaine inclination*) of the Third which leads me to believe (e.g., that the fire imposes upon me the sensation of heat). The natural light makes me know that something is true (*une lumière naturelle qui me fasse connaître que cela est véritable*). The natural inclination is not trustworthy. The illustrations of the Fifth are not sensory but mathematical. It is the nature of the triangle, selected as an instance of an eternal nature, that compels me to acknowledge its properties. This is related to the natural light, not inclination. This being constrained to assent may be called rational conviction. It is a third condition of the argument.

³ Cf. fn. 2.

apprehend the idea is innate. It is God's existence alone that will explain the possession of the capacity. There is then a fourth condition upon which the ontological argument depends, innate capacity. Perhaps a fifth factor should be listed—my recognition of my finitude and imperfection, a recognition that depends upon the apprehension of perfection.

One wonders what, in Descartes' mind, is the relation of the ontological argument to those of the Third Meditation.⁴ In a letter he remarks that all arguments from effects are really one. I am not sure that he viewed the arguments of the Third and Fifth as forming just one argument. In any case, it is somewhat strange that he did not explicitly state the ontological argument in the Third, and all the more because it had already been stated in the *Discourse*.⁵ The facts suggest that there is something strategic in placing the ontological argument after a discussion dealing with error and after a definition of the essence of material things. One suspects that between the *Discourse* and the *Meditations* there was development in Descartes' metaphysical thought. He may have come to believe that the ontological argument could not be convincingly expounded until attention had been called to the being of eternal and immutable natures, and had been focussed upon the fact that these are not invented by him who possesses mind but only apprehended in virtue of that possession. Whatever may be the truth of the matter, it is at least evident that the arguments of the Third depend upon the apprehension of the eternal idea of Perfect Being, upon recognition that the thinking thing did not invent it even if the conventional historical terminology was invented.

These considerations seem to me to be important independently of any particular historical system. Here is one of the few

⁴ Descartes does use the word "proof" of the arguments of the Third, as if they could stand alone.

⁵ Descartes remarks somewhere that I may have the idea of a first cause, but I could not say that it is God if I did not veritably have the idea of God. Unless the thinking thing perceives that idea, the arguments of the Third cannot be formulated. If it is the case that "... c'est presque la même chose de concevoir Dieu, et de concevoir qu'il existe..." it is all the more remarkable that the ontological argument was not included in the Third.

thinkers of Olympian stature who seemingly appraises the ontological argument as coercive or at least rationally irresistible. But is it coercive independently of the arguments of the Third? Are the latter coercive independently of the ontological? Do they not depend upon the idea of a Perfect Being? Yet the Fifth declares that even if everything previously concluded were not true, the existence of God, as a conclusion from the inspection of the idea, would appear as at least as certain as all the truths of mathematics. The very apprehension of the idea imposes upon me the necessity of asserting the existence of that Being, as the apprehension of the idea of triangle imposes the necessity of asserting that the sum of its angles is equal to two right angles. The argumentation of the Third proceeds as if the idea can be apprehended without noting that actual and eternal existence belongs to the nature of a sovereignly Perfect Being. As evidence that determinate natures, such as triangle, are not invented, the fact is cited that various properties can be demonstrated of them. Presumably, such demonstration is really a process of making explicitly apprehensible and recognizable what lies within the determinate nature. If the situation is similar with respect to the idea of Perfect Being, then the arguments of the Third Meditation proceed *as if* the thinking thing had not noted that the idea of God involves necessary existence and compels the mind to affirm the existence of God. Either the idea can be apprehended in such a way that this is not perceived or else it is perceived, but the fact is neglected or suppressed. Since Descartes was already in possession of the ontological argument, it may be presumed that he proceeded, for what he thought to be good reasons, as if the thinking thing had not noted this aspect of the idea. Indeed, it could be maintained that the arguments of the Third Meditation could otherwise scarcely be presented as arguments independently demonstrating the existence of God and as necessary to the exposition of doctrine. These arguments vanish before the light of the ontological argument, like mists before the sun, if the ontological argument be valid. The arguments of the Third Meditation do indeed depend upon an apprehension of the idea of Perfect Being, but upon an inadequate apprehension even if this inadequacy be due to artifice.

This could be contested. After all, God is defined in the Third Meditation as an infinite substance, eternal, immutable, independent, omniscient, omnipotent and as that by which "I myself" and all other existing things—if there are any—have been produced. However conventional the definition, it is difficult to see how Descartes could have dealt with the idea of a supremely perfect and infinite being, to which no lack could pertain, describe this idea as the clearest and most distinct of all ideas in "my" mind, without stating that necessary existence is a perfection constitutively involved in the idea. It could be urged that Descartes fully recognized that all of the arguments are parts of a single argument, that he knew that the ontological argument underlay the arguments of the Third Meditation, and that the postponement of its enunciation until the Fifth was an expedient of exposition.

For purposes of discussion, let us for the moment assume that the arguments of the Third Meditation are really independent of the ontological and that the author thought so. What is the character of these arguments? They are obviously *a posteriori* and empirical. Cosmological arguments, in the usual sense, are of course unavailable for Descartes. Strictly speaking, nothing is known to exist save the thinking thing and the *thinkings* of the thinking thing, of which that thing may be aware. There is no cosmos and no cosmical order of existence to serve as a basis for argument to the existence of God. But since these arguments depart from and depend upon matter-of-fact, and apparently upon the only matter-of-fact open to Descartes, they could be called, somewhat extravagantly, cosmological. The central matter-of-fact is that the thinking thing, or the thing that possesses the thinking power, does in fact apprehend the idea of Perfect Being. The problem is to explain the fact. In one sense, there is no problem. If by having an idea is meant a process of thinking—I underscore the "ing"—an activity of the thing that thinks, what Descartes calls a mode of thought, then, as he avers, all seem to proceed from me in the same manner. If there be any problem here, it is what I should regard as a scientific one. I now think of the pyramids, but at another moment I think of dinner or the stellar universe. The causes or occasions of these events, and of

similar events in others, were such matters worth inquiring about, would be questions for appropriate scientific investigations. But this is not the matter-of-fact with which Descartes is concerned. The thinking thing, in its activities, may apprehend determinate and immutable natures or essences—the triangle, the circle, and innumerable others. It apprehends clear and distinct ideas. Despite Descartes' inconsistent use of terms, this is what he should mean by having such ideas. The fact certainly points towards a vast metaphysical problem, especially for a thinker who affirms that these apprehended essences are not invented by the apprehending power, however this power is to be described. The problem becomes climactic when it is noted that the *idea of Perfect Being* is apprehended, is perceived clearly and distinctly, although of course not perceived in all its infinite dimensions, i.e., is not *comprehended*. Now I think it could be argued that my limitations, my finitude and dependence, are made manifest in the dominion exerted by these non-invented natures over me, although I cannot recall that Descartes argues in this manner. The critical fact is the apparent incommensurability between the finite thinking thing and what it apprehends when it perceives the idea of Perfect Being. Whatever may be thought of a doctrine of innate ideas, we can sympathetically understand why Descartes is driven to the doctrine.

The fact to explain, then, is this, that a finite thing, cognizant of its finitude, apprehends the idea of an infinite and eternal substance. To Descartes, with his profound sense of the infinite, the distance between a finite thing and an infinite substance is infinite. Descartes, I think, might have argued that the fact that the thinking thing apprehends an infinity of determinate natures is sufficiently remarkable. But its apprehension of the idea of a sovereignly perfect being is then all the more remarkable. The problem is to explain how the fact can be the fact. The argumentation of the Third Meditation, as everyone knows, seeks to show that there is but one explanation. All other ways of seeking an explanation, save in the existence of God, must fail. Since the fact is as incontestable as it is extraordinary, it is necessary to posit the existence of God or else affirm that the fact is inexplicable.

The procedural problem is to find an economical way of

discarding all alternative alleged explanations. Here, I am inclined to believe, lies the clue to Descartes' treatment of time, which has been the object of so much criticism and discussion. The apprehending of the idea of Perfect Being is, of course, an event. But all such events, as modes of thought, proceed from the thinking thing and are manifestations of its endowment. Now we can consider time as a succession of instants. Whether Descartes meant that time is really such a succession, that the nature of time can be exhaustively resolved into a succession of instantaneities with para-temporal gaps between the instants, I for one am quite uncertain. But at any rate, Descartes seems to mean at least this, that time can be treated *as if* it were such a succession. When things having careers in time are viewed in respect to time as so treated, then such things reveal their conditioned existence. Their finitude, dependence, their derivative nature is made manifest. Between the creation of such things and their conservation, as indicated by their persistent existence in the succession of instants, there is only a distinction of reason. Since this applies to every finite or limited thing whose existence is temporal, the fact we seek to explain cannot be explained by reference of this fact or thing to other finite existents or to any collection of them. If no thing can be the author of its own existence, if no thing can be self-sustained and self-conserved, if no thing can maintain itself across the para-temporal nothingness between successive instants (which would be equivalent to creation at the later instant) then, even supposing that there exists anything in addition to the thinking thing (and this is not known), it is idle to look toward other existents for the ground of the existence of this thinking thing that does apprehend the idea of Perfect Being. The argument urges, in effect: grant that anything finite and temporal does exist and grant that time can be treated as if atomistic, then you must conclude that the ground of its existence lies in a trans-temporal unconditioned being. Reference to other things merely reinstates the problem and does not solve it, and would lead to an indefinite regress. But it is not known that anything else does exist besides the thing whose existence is indubitable, the thinking thing. It is then necessary for the thinking thing, in view of its indubitable existence in time,

to posit the being of a transfinite non-temporal ground of its existence.

I use the expression "trans-finite ground" advisedly. The argument, if valid at all, would apply universally, whatever the nature of the finite existent whose existence is conceded. If valid, the argument would show the necessity, when inquiry investigates existence, of recognizing a final referent, trans-finite and trans-temporal, for all temporal matter-of-fact. To treat time as a succession of instants with para-temporal gaps between the instants, neglecting time's possible continuity, is a means of making this necessary reference apparent. But the thinking thing alone is known to exist and it is known—at least so Descartes insists—to apprehend the idea of an eternal and unconditioned being rightly to be called God. Since there must be a trans-finite and non-temporal source of all finite and temporal existence, and since the idea of God is as it is apprehended, this source of creation and conservation can be nothing other than Perfect Being or God. Since the thinking thing does effect this apprehension; and since this apprehension is an activity or mode of *thinking* and seems to proceed from the thinking thing like any other thinking activity, it is the idea apprehended which indicates the tremendous dimensions of the fact. Accordingly, we must posit an innate capacity to achieve it.

In what precedes there is implied a distinction between the idea and the thinking activities, the events in the I-that-thinks. The term "idea" has been reserved for the determinate non-invented nature. The Cartesian terminology is far from consistent. The argumentation of the Third could be interpreted in two ways. It could be urged that such expressions as "the Idea of God" are intended to signify processes of *thinking*, as modes of *thinking* which seem to proceed from the thinking thing in the same manner. With terminology so construed, the question is one of the authorship of thinking activities. Although obscurely expressed, the point on which the argument then pivots is this: the thinking thing could conceivably be the author of all *thinkings* save that one which may be described as "having" the idea of God. So construed, there is no question of determinate natures or non-invented forms. There are only events proceeding from the

resources of the thinking thing. Even extension, etc., although not formally in the nature of the thinking thing, might be contained eminently in it. We are elsewhere assured that God could exist without the thinking thing having the idea of God, but it could not have the idea unless God does exist. In fact, it does achieve an activity which may be described as a *thinking about* the idea of God. It is then the author of this *thinking about* just as truly as it may be the author of a thinking about a stone or heat or triangle. Assuredly, in this sense, the idea of God is invented by me, for as a thinking thing I am the originator of all of my *thinkings*. It is subsequently urged, of course, that the exceptional thinking is due to an endowment, an "innate idea," provided by God. But obviously, this explanation depends upon the demonstration of God's existence.

Interpreting Cartesian terminology in the manner indicated, and freed from verbal ambiguities, the argumentation of the Third is from a fact, an event, a *thinking*. Now doubtless it will be granted by many, even by some who are hostile to the Cartesian claims, that this achievement of the thinking thing is a most remarkable and most exceptional one. As one might exclaim over the works of human genius, in the sciences and the arts, so one could exclaim over this work of the finite mind. If the idea of Perfect Being be an invention of the thinking thing, and if all that can be meant by the idea is that it is a thinking activity, something of the Cartesian estimate of the fact remains even for those who find the Cartesian account of it unacceptable. The philosopher, according to Plato, should be the spectator of all time and existence. The metaphysician who seeks to obey this injunction must view the works of human genius, and not least this invention of the idea of Perfect Being, as extraordinary features of existence. The materialist must celebrate the fecundity of matter. A Santayana must exploit the resources of the poet in order to do justice to the potentialities of nature. Such thinkers must surely admire the efforts of a Descartes to reckon with the fact, even if the efforts be regarded as mistaken.

Now I am not contending that the argumentation of the Third Meditation is convincing or coercive. My present interest is to point out that the argument, on this interpretation of terminology,

does not seemingly imply the implicit presence of the ontological argument. The central matter-of-fact is the thinking described as having the idea of God. The conventional definition states what the *thinking* is *about*, just as definitions of stone, star, or triangle would state what corresponding *thinkings* are about. But does this exhaust the situation? If the ontological argument is not implicit in the Third and is not needed, is not a doctrine of non-invented eternal natures presupposed?

Let us revert to the introductory paragraphs of the Fifth. I find in me an infinity of ideas of certain things. They are not a pure nothingness even though they may have no existence outside my thought. They are not figments, though I can think of them or not as I please. They have their true and immutable natures. Even if I imagine a triangle that has no exemplification in the world, this figure in my imagination has a certain nature, form, or essence determinative of this figure, and this nature is not invented by me. It does not in any manner depend on my mind (*esprit*). To find an infinity of such ideas within me, I would contend, means the possibility of an infinity of thinkings-about eternal natures and these natures do not depend upon me as the thinking-about activities do so depend. Reference to a non-invented nature is necessary to define my thinking-about. The control of my thinking lies sovereignly in the immutable nature itself, not in the thinking or even in the imaged figure.*

A doctrine, deplorably incomplete, of eternal natures conditions the Cartesian version of the ontological argument. There are texts that suggest that God, had He so willed eternally, could have established that the sum of 2 and 3 should be other than 5. Of course had He done this, and nevertheless made the thinking thing as it is in fact, the latter could never understand this. Since God does exist, and is not a deceiver, the thinking thing is warranted in its irresistible conviction that the sum is 5.⁷ The realm of eternal determinate natures, if invented at all, is invented

* This is reinforced by the fact, insisted upon elsewhere, that there are such natures—the chiliagon, for example—that cannot be imaged but are intelligible.

⁷ Gassendi objected that it is a serious matter to set up some eternal being in addition to God. Descartes replies that Gassendi would be right if

by God, not by finite mind. The thinking thing can but look and find and acknowledge them. If it can be demonstrated that God does exist, the innate idea doctrine is at least not unreasonable. If God does exist, an irrational principle does not pervade the ground of existence. One could surmise that the capacity for finding an infinity of natures is due to an innate endowment. A Descartes, one might conjecture, could believe that the deity looked upon mathematicians with especial approbation—a conviction seemingly shared by mathematicians!

In the context of the Fifth, the idea of God is to be construed as an eternal nature not invented by the thinking thing. This thing must affirm what the idea dictates, as with the triangle. It may be the case that this idea of God, involving an infinity of perfections, can never be even faintly *comprehended*. But it is truly apprehended, at least to the extent that actual and eternal existence pertains to this nature. This is said to be not less certain than the certainty Descartes has hitherto attributed to mathematical truths concerning numbers and figures. As with the latter, so with the former—the necessity of affirmation resides in the non-invented nature.

It is now appropriate to ask this question: could the arguments of the Third even be formulated unless the idea of Perfect Being is assumed to be, not a *thinking*, but an eternal non-invented idea? It may be granted that the *thinking* as a thinking about is a matter-of-fact. But how could even a Descartes identify the activity unless the idea as eternal nature be apprehended? The extraordinary dimensions of the fact cannot be appreciated unless another idea, said to be innate, the idea of "myself," can be understood. But the apprehension of this idea—or at least its appreciation—depends upon the apprehension of the idea of Perfect Being. If these ideas be nothing more than *thinkings*, there would be these two matters-of-fact. But my *thinkings* are *mine*, and all seem to proceed from me in the same manner. The facts might occasion appropriate scientific and historical inquiries. The doctrine of innate ideas might or might not be a useful hypo-

it were a question of an *existing* thing. But it is a matter of essence, not existence. These essences are not independent of God. Because God has so willed, they *are* eternal and immutable.

thesis. But the negative side of the Third's arguments proposes, in effect, to show the irrelevance of such inquiries for metaphysics. These crucial facts could not be isolated and seen to be crucial unless Descartes is tacitly assuming that the idea of God is an eternal essence and that some of its constitutive features are apprehended.*

Descartes has been quite thoroughly dead for three hundred years. Many would say the same of his doctrine. Aged as are the historical remains, something may be gained by reflection upon them. I conclude with a few highly conjectural reactions, which may be relevant to all versions of the ontological argument in so far as similar to the Cartesian.

The Cartesian variant seemingly involves a doctrine of eternal natures, eternal and immutable because God has so willed them. Since they comport possible existence, it is convenient to refer to them as the realm of possibles. This realm has being because of an eternal act of the divine will. This is their objective status. But what of the idea of Perfect Being? It is distinctive, of course, in that it constitutively involves necessary existence. In this sense, it can scarcely be a member of the sets of eternal natures. Does this idea lie at the basis of the sets? There is textual warrant for the contention that the thinking thing apprehends it as it apprehends the possibles, say, triangle. It sovereignly exerts dominion over the thinking thing with the consequence that the possessor of the thinking thing is constrained to hold as true whatever is perceived in the idea. The idea of God, as apprehended (not *comprehended*) is for the thinking thing *the* idea of God. In some sense, then, the idea of God is apprehended in a manner similar to the apprehension of non-invented natures, such as triangle. In relation to the thinking thing it declares itself, at least partially. It is apprehended, perhaps one could say, as if it were the sovereign idea at the summit of an infinite system of

* This is not to insist that the ontological argument is implicitly assumed in the Third. It is notable that in the *Principles*, the ontological precedes the other arguments. It seems necessary to insist only on this, that the doctrine of eternal natures is required to make the Third intelligible.

determinate natures. It is tempting to liken it to the Platonic idea of the Good.

However all this may be, it is God's existence alone that can assure the authenticity of the possibles. The thinking thing cannot but think that the sum of 3 and 2 is 5. It is, however, only the existence of God that guarantees that the thinking thing thinks rightly when it does so think. If the idea of God be apprehended not too inadequately, then the thinking thing cannot but hold as true that God exists. The conviction is irresistible. But again it is God's existence alone that warrants this conviction and reveals that it is in accord with the very basis of existence. Now let it be granted that the thinking thing does perceive that necessary existence is constitutively in the idea: this is at least a part of its objective reality. Is, then, the ontological argument merely an explication of what is perceived, as the instructed pupil perceives that the equiangular triangle is equilateral? If this be the situation, we are driven back to argumentation similar to that of the Third. We must establish God's existence by some argument that would reveal the harmony of the divine will and what the thinking thing cannot but affirm. If God does exist, the thinking thing—more accurately, the man—judges rightly when judging that the sum of 2 and 3 is 5. The human will is then brought into accord with the eternal will. If God does exist, the man rightly affirms that, since necessary existence is a constitutive element in the apprehended idea of God, this being truly exists. In these conditions, the arguments of the Third and the ontological would indeed be necessary parts of a single argument.

If, however, the ontological argument taken by itself is genuinely coercive—and Descartes seems to mean this—the question re-emerges. What is the status of the idea of God? Figuratively expressed, where is the idea? Assuredly, not within *mathesis universalis*, which rests upon a divine decree! What is perceived when the idea of God is perceived? A faint reflected image of the divine essence? Upon what does the thinking thing gaze when it takes advantage of its innate capacity? I do not know how to provide a substantiated Cartesian answer. I offer mere conjectures.

Perhaps we reach the limits of Cartesian thought when we consider the discussion of *causa sui*. Replying to Arnauld, Descartes asserts that in God essence and existence are not distinguished. God stands to Himself somewhat as an efficient cause does to its effect. But this is merely a manner of speaking due to the imperfections of our understanding. In the Replies to Caterus and Arnauld, Descartes' texts suggest a frequent shift of emphasis—a shift from what follows from the idea of God (the ontological argument) to an insistence upon the priority of existence, that is to God as *causa sui*. It is said, in the Reply to Caterus, that we cannot think of God's existence as being possible without admitting, because of His infinite power (*sa puissance infinie*), that He can exist by His own power (*par sa propre force*), and from this we can conclude that He really exists and has existed from all eternity. In reply to Gassendi, it is said that God is His existence (*Dieu est son être*). To answer the question of why God exists in the Reply to Arnauld, it is said that the question is to be answered, not by giving an efficient cause, but only by reference to the essence of the thing itself or by the formal cause; owing to the fact that in God existence is not distinguished from essence, this has a very great resemblance to the efficient cause and can perhaps be called a quasi-efficient cause. Strictly speaking, of course, God needs no efficient cause because He is an infinite being and existence is His essence (*parce qu'il est un Etre infini duquel l'existence est son essence*). It is due to the immense and incomprehensible power that is contained in the Idea of God that we recognize that this is the cause why God exists, as Descartes states in the Reply to Caterus. It is said in defense against Arnauld that such forms of expression, reflecting an analogy with efficient causality, are necessary to lead the natural light so that we conceive things clearly. They are likened to Archimedes' device of treating curvilinear figures as though they were rectilinear figures.

I cannot resist the conviction that, for Descartes, metaphysics and metaphysical theology go on between two limits. The one limit, of course, is the indubitable truth that the thinking thing exists and that this thing is a thinking thing. The other limit, I conjecture, is indicated by *causa sui*. That God is, that to exist is what God is, that an immense, immeasurable power is the existence

which in God is not to be distinguished from His essence—something like this appears to lie beyond the idea of God or Perfect Being, if such an expression be permitted. *Causa sui*, and the expressions based on analogy with efficient causality, intend to point to an absolute existent, to an *a se*. Perhaps this could be described as the necessity of postulating that existence, infinite and immeasurable power, defines a limit of metaphysical thinking. Leaning over the ramparts of metaphysics, the thinking thing can but point to the infinite sea of existence. Recognizing absolute existence, the thinking thing can characterize this absolute as Perfect Being, for no reason can be assigned to make intelligible why this eternal act of existence should limit itself. *Causa sui*, I venture to conjecture, expresses for Descartes this obeissance of the inquiring mind. In the order of knowledge, indeed, we must start with the idea of Perfect Being in order to make articulate that a necessary being does exist and that all beings marked by any lack are derivative and dependent. The ontological argument and the other arguments, operating within the limits defined by the postulate of absolute existence and the thinking thing's existence, propose somehow to relate these limits inside the total body of knowledge.

Even so, the question remains: what is the status of the idea of God? The Cartesian ontological argument depends upon the distinction between the apprehending activity and the idea apprehended. The idea of God is assuredly not a humanly invented nature—at any rate, not for Descartes. If in God essence and existence are not distinguished; if God's existence is His essence; if His infinite power of existing is the ground of His perfection, with the result that the idea of Perfect Being is the *idea of God*: what, then, is apprehended when the apprehension occurs? Apprehending activities, it seems, are distinguished by what they severally apprehend. That one or several or all such activities are conditioned by innate endowment is beside the point. On the one hand, with respect to the thinking thing, the idea of Perfect Being is like any other eternal nature in that it determines what the thinking thing perceives and what it must hold as true. On the other hand, the idea of Perfect Being determines the thinking thing to affirm the existence of that

Being—and this no other idea does. In so doing the thinking thing acts in accord with divine will. With what, then, is the act of affirming the existence of Perfect Being in accord? Assuredly, with that absolute existence that is the being, the to-be, of God.

It may be preposterous to attribute to Cartesian metaphysics a tendency, implied if not expressed, towards mysticism or a mystical supplementation for the ontological argument. Preposterous or not, I do not see how the Cartesian version can be sustained unless some account of the status of the idea of God can be supplied, and I cannot see how this can be supplied save by postulating something analogous to a mystical intuition. If the ontological argument is not to collapse into argumentation based on identifying the idea of Perfect Being with a *thinking*, a mere event in the thinking thing's career, it would seem necessary to posit that, prior to the apprehension of the *idea* of God, there is a vision, an intuition, rational or supra-rational, of *God*, of the absolute existent.

Once provided with the perception of the idea of God, the ontological argument, in the order of the thinking thing's knowing, establishes God's necessary existence as the basis for all knowledge. Whether or not the ontological argument is necessary to give force to the arguments of the Third Meditation, at least the idea of Perfect Being is required in order to define the empirical factual basis. The Cartesian metaphysics is seemingly bi-polar perhaps one could say existentially bi-polar. At one extreme is the recognition of a finite existent, the thinking thing, indubitably existing and indubitably limited and finite in its existence. At the other extreme, there is implied rather than expressed the recognition of an absolute existent. In the *Recherche de la Vérité*, Descartes urges that no one can be so stupid as to need to learn what existence is before one is able to conclude that he is. Existence as such appears to be indefinable. Concede that anything limited exists and you must concede that an absolute exists and is perfect. Beyond the Cartesian arguments, I conjecture, there lies this recognition of existence defining the limits of inquiry. Without this recognition or mystical intuition of existence, I do not see how to account for the status of the idea of Perfect Being.

I cannot cite chapter and verse to justify this supplementation of Cartesian doctrine.* But after all, the Third Meditation ends with a fundamentally Cartesian sentiment. Faith, he writes, teaches us that the sovereign felicity of the next life consists only in the contemplation of the divine majesty. We may now, however, experience that a similar contemplation, although incomparably less perfect, may cause us to enjoy the greatest contentment that we are capable of feeling in this life.

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* I am haunted by an ill-defined memory of a text that might be corroborative. After considerable effort, I must admit I have been unable to find it.

SINGLE LOCATION, SIMPLE LOCATION, AND MISPLACED CONCRETENESS

NATHANIEL LAWRENCE

"The guiding motto in the life of every natural philosopher should be, Seek simplicity and distrust it."

(*The Concept of Nature*)

"The philosophy of organism is mainly devoted to the task of making clear the notion of 'being present in another entity.'"

(*Process and Reality*)

I

A prevailing but fallacious tradition in Whiteheadian interpretation was brought, not long ago, into sharp focus. In a lucid and compact article¹ William Alston interprets the meaning of "The Fallacy of Simple Location," one of the most notorious of Whitehead's ideas. Mr. Alston maintains four theses:

(1) That Whitehead's remarks on simple location entail neither an absolute theory of space-time nor a relativistic one. The evidence for this conclusion, especially in view of Whitehead's own remarks, is very good. The ghosts raised by Emmet and Das² are laid.

(2) That "simple location" should really be called "single location" and that its denial should be called "multiple location." This plausible interpretation, I believe, is mistaken. Lovejoy substituted "single location" for "simple location" as early as 1930.³ The identifying of multiple location with the denial of simple location was made by Price two years later.⁴ Since then these misinterpretations apparently have held the field unchal-

¹ "Whitehead's Denial of Simple Location," *Journal of Philosophy*, XLVIII (1951), pp. 713-21.

² See Alston, p. 713, n. 1.

³ A. O. Lovejoy, *The Revolt Against Dualism* (New York, 1930), p. 165.

⁴ H. H. Price, *Perception* (London, 1932), pp. 55 ff.

lenged.⁸ They have provided Mr. Alston with an unfortunate heritage. "*Simple location*" can not be rendered "*single location*." Moreover, its denial is not equivalent to the assertion of multiple location, nor to the assertion of "complex location," as many other careful students of Whitehead might suppose.

(3) That the denial of simple location is to be equated with the assertion of the mutual immanence of actual entities. Certainly the latter notion arises in connection with the former, but the denial of simple location construed as the assertion of multiple location is not to be identified with mutual immanence.

(4) That the "fallacy" of simple location can be identified by the following pair of definitional statements:

A philosopher commits the fallacy of simple location if and only if he holds that, in whatever sense of spatio-temporal location is fundamental in his philosophy, a spatio-temporal entity can be located in only one region of space-time. And, conversely, a philosopher avoids the 'fallacy' if and only if he holds that, in his basic sense of location, a spatio-temporal entity can be located in more than one space-time region.⁹

For Whitehead spatio-temporal entities, however, are events. Moreover, for Whitehead *it is primarily objects, as we shall see,—including eternal objects, which are not events—that are located.* Putting this issue aside, for Whitehead *whatever is said to be located can only be located in one region of spacetime.* So strong is the adverse tradition which Mr. Alston clearly presents that the foregoing statement seems at first sight fantastic. In order to establish the assertion, therefore, as well as the others preceding, it will be necessary (a) to consider the background of his own

⁸ Most authors skirt the issue. An exception is E. B. McGilvary ("Space-Time, Simple Location, and Prehension," in *The Philosophy of Alfred North Whitehead*, ed. P. A. Schilpp (New York, 1951), p. 230), who seems to subscribe to a variant of the—by now—traditional interpretation. Earlier commentators, such as L. S. Stebbing, R. B. Braithwaite, and D. M. Wrinch in a symposium on the subject "Is 'The Fallacy of Simple Location' a Fallacy?" (*Proc. Arist. Soc.*, Suppl. Vol. 7, pp. 207-43), do not deal in any conclusive way with the problem. In recognizing that Whitehead nowhere in *Science and the Modern World* calls the assertion of simple location a fallacy, Miss Stebbing may be exhibiting some grasp of some of the points which follow in the present essay.

⁹ Alston, pp. 720-21.

ideas from which Whitehead's *Science and the Modern World*⁷ springs and (b) to engage in the tedium of documentation, including those avoided passages which most damage the prevalent interpretation or interpretations.

II

Mr. Alston's essay is distinguished, especially in its latter half, by its relating of ideas found in *Science and the Modern World* to their subsequent development in *Process and Reality*.⁸ I should like to extend this rare and rewarding procedure even further than does Mr. Alston in order to get at the roots of the denial of simple location. We shall look backward briefly at Whitehead's views preceding *Science and the Modern World*.

In his earliest large scale work on the philosophy of nature, *An Enquiry Concerning the Principles of Natural Knowledge*, Whitehead distinguishes two basic types of entities, events and objects.⁹ Objects, says Whitehead, are "only derivatively in space and time by reason of their relations to events,"¹⁰ and this fact entails that they are, strictly speaking, without (spatio-temporal) parts and indivisible.¹¹ As he points out in *The Concept of Nature*, they do not share in the passage of nature.¹² They are simply characteristics or properties of events and thus may be said to be abstract, in a certain sense. Indeed Whitehead finally says flatly, in *The Concept of Nature*, that material objects and scientific

⁷ *Science and the Modern World* (SMW) (New York, 1925).

⁸ *Process and Reality* (PR) (New York, 1929).

⁹ *An Enquiry Concerning the Principles of Natural Knowledge* (PNK) (Cambridge, England, 1919), ch. V, "The Natural Elements." The initial discrimination is of five types of entities (p. 60), four of which are different types of objects. They are initially put on a par with one another, but the treatment of events and objects (without specification) which directly follows, as well as that elsewhere in the same work and in *The Concept of Nature*, published exactly a year later over much of the same material, indicates that Whitehead regards them as the two fundamental types of entities.

¹⁰ PNK, p. 63.

¹¹ PNK, p. 65.

¹² *The Concept of Nature* (CN) (Cambridge, England, 1920), p. 143.

objects are both abstractions and that "the concrete facts are the events themselves."¹³

We are now in a position to examine the initial phase of the attack on simple location.

The chief confusion between objects and events is conveyed in the *prejudice that an object can only be in one place at a time. That is a fundamental property of events*; and whenever that property appears axiomatic as holding of some physical entity, that entity is an event.¹⁴

The event can only be in one place at one time, i.e. it is spatio-temporally unique. Objects are not so restricted. Whitehead, at this stage of his development, attacks the fallacious conception that objects can not be in several places simultaneously. Being not strictly spatio-temporal, they *can* be in several places at a time; but events (which are strictly spatio-temporal) can not. Objects are not confined to a single place; events are. If this earlier doctrine is not sharply overhauled in its later forms, then Alston's formula, which treats simple location as a fallacy relating to *spatio-temporal entities alone*, may be regarded as at best seriously misleading. However, whence the very evident plausibility of Mr. Alston's views based on pertinent citations from *Science and the Modern World* and *Process and Reality*?

The earliest assault on simple location as not holding for objects had as a primary aim the revision of the theory of perception. This revision was intended to end what Whitehead called the "bifurcation of nature" into nature existing and nature perceived.

The bifurcation theory is an attempt to exhibit natural science as an investigation of the cause of the fact of knowledge. Namely, it is an attempt to exhibit apparent nature as an effluent from the mind because of causal nature. The whole notion is partly based on the implicit assumption that the mind can only know that which it has itself produced and retains in some sense within itself . . .¹⁵

For Whitehead science is engaged in

¹³ CN, p. 171.

¹⁴ PNK, p. 65; italics mine.

¹⁵ CN, pp. 31-32.

determining the character of things known, namely the character of apparent nature. But *we may drop the term 'apparent'; for there is but one nature, namely the nature which is before us in perceptual knowledge.*¹⁶

In order to organize the complex facts of nature, both science and philosophy must get rid of the

simple-minded theory that an object is at one place at any definite time, and is in no sense anywhere else An object is ingredient throughout its neighbourhood, and its neighbourhood is indefinite. Also the modification of events by ingression is susceptible of quantitative differences. Finally therefore we are driven to admit that each object is in some sense ingredient throughout nature . . .¹⁷

Objects, especially sense-objects, "ingress," that is, are ingredients or qualities of events in a very complex manner.

The sense-awareness of the blue [a sense-object] as situated in a certain event which I call the situation, is thus exhibited as the sense-awareness of a relation between the blue, the percipient event of the observer, the situation, and intervening events I will use the term 'ingression into nature' for this systematic correlation of the blue with nature.¹⁸

With respect to this ingression the events in nature can be divided into four classes: (i) the percipient event ("the relevant bodily state of the observer"), (ii) the situation (where the perceiver sees the blue), (iii) the active conditioning events (whose characters are "particularly relevant" for the situation to be a situation for a particular percipient event), and (iv) the passive conditioning events which are the "rest of nature."¹⁹

This is not mere multiplicity. The above passages indicate not only "quantitative differences" in the various aspects of an ingredient object, but also qualitative *complexity*. For instance, as blue ingresses we discover varying degrees of relevance *among the events themselves* by reason of the presence of the blue according to its mode of location (as Whitehead later comes to call it) in this or that event.

¹⁶ CN, p. 40; italics mine.

¹⁷ CN, p. 145.

¹⁸ CN, p. 152.

¹⁹ *Ibid.*

We may now consider what location has to do with the foregoing analysis. The investigation is of the first order of importance. "Location" as used in the works under scrutiny is a technical term. It should not be confused with the roughly expressed property of being "at a place," nor with the more concrete notion of being *situated*.

In all cases however I use situation to express a relation between objects and events and not between objects and abstractive elements. There is a derivative relation between objects and spatial elements which I call the relation of location; and when this relation holds, I say that the object is located in the abstractive element. In this sense, an object may be located in a moment of time, in a volume of space, an area, a line, or a point. There will be a peculiar type of location corresponding to each type of situation; and location is in each case derivative from the corresponding relation of situation in a way which I will proceed to explain.²⁰

The explanation is given in terms of abstractive sets and would lead us far afield.²¹ It is sufficient for our present purposes to notice that: (i) The relation of situation holds between objects and events. (ii) The relation of location derives from the more fundamental relation of situation and refers to the status of objects with respect to the spatial features of events, rather than the concrete events themselves.²² (iii) As we see from the analysis of ingression given above, the situation is only one of the many events in which the ingressing object makes itself felt. The way it is represented is as being *perceived* where it is situated.

In summary of Whitehead's early views on objects, events, and locations, we may say that: (1) Events can only be in one place. (2) Objects can ingress into nature complexly and thus be

²⁰ CN, pp. 160-61.

²¹ For a critical discussion of the derivation of abstractive elements from abstractive sets see Nathaniel Lawrence, "Whitehead's Method of Extensive Abstraction," *Philosophy of Science*, XVII (1950), esp. pp. 148-51.

²² The spatial element is really all that is involved in the foregoing account, since a "moment of time" is nothing but an instantaneous spread of all nature with the temporal aspect of nature representable as vanished (See CN, pp. 56-57 and Lawrence, pp. 147-51 for comment). However, in *SMW*, the approach to simple location *does* include reference to time, as well.

in many places. (3) One event in this complex is the situation, which is where the object is *perceived* as being. (4) The spatial features of the situation are related to the ingredient object by the relation of location. Thus, while an object ingresses in diverse events in many ways, it has only *one* location; the relation of location is an abstract one which neglects the other and complex features of ingression. Being in many places doesn't mean having many locations.

III

We now have all the analytical tools necessary for unscrambling the prevailing misconceptions about "simple location." One historical point remains to be noticed however.

In the works we have just been considering all objects are said to ingress into nature. Whitehead indicates, though, that the analysis of neither scientific objects (electrons, etc.)²³ nor physical objects²⁴ requires any reference to a percipient event. The ingression of sense-objects does involve percipient events.

Two years later Whitehead was apparently led by this distinction to overhaul the doctrine of ingression. In *The Principle of Relativity*²⁵ Whitehead confines "ingression" to sense-objects alone. "Chairs, tables, and perceptual objects generally, have lost the complexity of ingression . . ." ²⁶ In the presidential address given to the Aristotelian Society the same year, he remarks,

A sense-object has also in general the pervasive property; but its relation to its situation is entirely different from that of a perceptual object, in that it is derived from its ingression in nature, which is an irreducible many-termed relation.²⁷

Perceptual objects are the "controls" of ingression.²⁸ The

²³ CN, p. 158.

²⁴ PNK, p. 89. Actually Whitehead says "non-delusive object," but this is called physical object on the following page.

²⁵ *The Principle of Relativity (Rel)* (Cambridge, England, 1922).

²⁶ *Rel*, p. 38.

²⁷ "Uniformity and Contingency" ("UC"), *Proc. Arist. Soc.*, n.s., XXIII (1923) p. 15.

²⁸ "UC," pp. 16-17.

discernment of perceptual objects and (even more so that of) scientific objects reduces the "contingency of nature" ²⁹ which is most noticeable when we consider nature merely as a flux of sense-objects. To discern more permanent objects is to bring order out of chaos.

The results of the change in doctrine pose a problem. With the confinement of the polyadic relation of ingression to sense-objects there comes the reduction of the relation of other objects to events (e.g. that of scientific objects) to the status of merely being two-termed.³⁰ This position is obviously unsatisfactory. Whence the apparent ingression of scientific objects throughout the universe?³¹ Whence the ordered interconnectedness of events, if only sense-objects complexly qualify them, and they (the sense-objects) are the most fugitive and disorderly features of natural process, when considered by themselves? Must such intimacy be described in terms of mere spatio-temporal community? The answer to this problem comprises an important part of *Science and the Modern World*. The question is not directly indicated in that work, yet if it is not recognized as an important question, the answers which are given to it run the risk of being thinly interpreted.

IV

A (if not *the*) primary aim of the early doctrine of ingression was to prevent the theory of perception from plunging us into epistemological dualism—what Whitehead calls the "bifurcation of nature." In consideration of this doctrine we saw that ingression is multiple and complex. Location, on the other hand, is single and abstract. It is single in that it derives from the situation, which is only one event among the many in which the object ingresses.³² It is abstract in that it refers only to the relation

²⁹ *Rel*, p. 34.

³⁰ *Rel*, pp. 28-29.

³¹ See, for instance, *PNK*, p. 96; *CN*, pp. 145-46, 159.

³² Whitehead explicitly intends to use the term "situation" not only for the relation between an object and the event where the object is perceived, but for the event itself. See *CN*, p. 147.

between an object and the abstract spatial features of its situation. Finally, and largely in virtue of the foregoing, it is simple. An object ingresses, multiply and complexly, into concrete events. But it is only singly located, and as merely located, must be said to be viewed abstractly, apart from its other relations. The great part of the doctrine in *Science and the Modern World* can be treated simply as ramification of these views.

We shall begin, as before, with the theory of perception and the doctrine of ingression.

An entity of which we become aware in sense perception is the terminus of our act of perception. I will call such an entity, a *sense-object*. For example, green of a definite shade is a sense-object; so is a sound of definite quality and pitch; and so is a definite scent; and a definite quality of touch. The way in which such an entity is related to space during a definite lapse of time is complex. I will say that a sense-object has *ingression* into space-time. The cognitive perception of a sense-object is the awareness of the prehensive unification (into a standpoint *A*) of various modes of various sense-objects, including the sense-object in question. The standpoint *A* is, of course, a region of space-time; that is to say, it is a volume of space through a duration of time. But as one entity, this standpoint is a unit of realised experience. A mode of a sense-object at *A* (as abstracted from the sense-object whose relationship to *A* the mode is conditioning) is the aspect from *A* of some other region *B*. Thus the sense-object is present in *A* with the mode of location in *B*. Thus if green be the sense-object in question, green is not simply at *A* where it is being perceived, nor is it simply at *B* where it is perceived as located; but it is present at *A* with the mode of location in *B*.³³

I cite the passage at length because it is canonical and because it relates together several terms which we must now examine piecemeal.

(1) In the first place, sense-objects are said to ingress into space-time, as in the earlier-works. Moreover, relations involved are said to be *complex*, not just multiple. Complexity usually means more than mere multiplicity, but this is only a minor point. We shall shortly see that the denial of simple location entails the assertion of *neither* multiple *nor* complex location.

(2) Secondly, we notice that here at least, it is *sense-objects*, not events, which are said to be located somewhere. Now sense-

³³ *SMW*, p. 103.

objects are eternal objects, this latter class including geometrical characters as well as so-called "qualities."³⁴ And eternal objects, as their name implies, are *not* primarily spatio-temporal entities. As Whitehead says,

Eternal objects are thus, in their nature, abstract. By 'abstract' I mean that what an eternal object is in itself—that is to say, its essence—is comprehensible without reference to some one particular occasion of experience.³⁵

Whitehead goes on to remark that he does not mean to say that eternal objects are *disconnected* from actual occasions. But the eternal object, which Whitehead speaks of as being located, is not in itself a spatio-temporal entity. Spatio-temporal entities are events. However, the proposed definition of the fallacy and how to avoid it, which we have been criticizing, is exclusively in terms of spatio-temporal entities: "if and only if . . . a spatio-temporal entity," etc. The foregoing passage shows that the simple conditional "if" would have been safer. Even this is hazardous, for Whitehead only rarely and hesitantly speaks of *events* as located at all, and then with the provision that such events *are* simply located!³⁶

(3) Thirdly, attention should be sharply focused on the sentence, "Thus the sense-object is present in *A* with *the* mode of location in *B*." Whitehead does *not* say that the sense-object is located at *A* and also located at *B*. The mode of *location* is at *B* alone. Within the same paragraph he also speaks of "*the* mode of location in *B*," "*the* mode of having location at the image of the leaf behind the mirror," "*the* mode of being located in the actual leaf."³⁷ The repeated use of the definite article is not a series of coincidences; in every case the context of usage is quite clear: the sense-object is *present* where it is being perceived, namely at *A*, and has its mode of *location* at *B*, where it is perceived. The doctrine is the same, essentially, as that in the early works. Ingression is complex and multifarious. Location is not, as

³⁴ *SMW*, p. 151.

³⁵ *SMW*, p. 228.

³⁶ See below, passage identified in note 41.

³⁷ *SMW*, pp. 103-104; italics are mine.

Mr. Alston asserts, multiple; it is single. The long passage from which these citations are taken is one in which the topical target is the theory of simple location.

(4) To introduce the fourth point, the present study must become very narrowly lexicographical, in order to become more broadly explicative. Whitehead says, "Thus if green be the sense-object in question, green is not *simply* at *A* where it is being perceived, nor is it *simply* at *B* where it is perceived as located; but it is present at *A* with the mode of location in *B*." I call attention to the word "*simply*." It could be rather well rendered as "*merely*." The sense of the passage is that "being at" stands for a rather general idea, of which one specific form is the notion of being located somewhere, but merely being located is not the only way an object can be at some standpoint. Whitehead repeatedly uses the word "*simply*" in the sense of "*merely*." For example, "Perception is simply the cognition of prehensive unification . . ." ³⁸

The things which are grasped into a realised unity, here and now, are not the castle, the cloud, and the planet simply in themselves; but they are the castle, the cloud, and the planet from the standpoint, in space and time, of the prehensive unification. ³⁹

Also, "It does not follow, however, that the science of the seventeenth century was simply wrong." ⁴⁰ Each of the passages occurs when Whitehead is specifically discussing simple location. In each case the "*simply*" means "*merely*." This somewhat picayune sentence-squeezing would have little authority by itself, but it serves, in the light of the previous discussion, to provide a rough translation of "simple location" which will at least expose its universally ignored meaning, namely "mere location." *The difficulty of simple location, then, lies in the error of supposing that in specifying the mere location of something we have concretely and adequately accounted for its presence in space-time.* This usage would seem to be especially apt in one of the few passages where Whitehead provisionally attaches the notion of

³⁸ SMW, p. 104.

³⁹ SMW, p. 102.

⁴⁰ SMW, p. 85.

location to an event: "There is, so far as we have gone, more sense in saying that an act of perception has simple location; for it may be conceived as being *simply* at the cognised prehension."⁴¹

Let "mere location" then be an abbreviation for a more tedious expression, "location alone without reference to the other and complex ways in which an entity may be in space-time." As Whitehead says, "my theory involves the entire abandonment of the notion that simple location is the primary way in which things are involved in space-time."⁴²

The traditional interpretation of simple location commits the fallacy of accent, letting the emphasis fall on the word "simple" rather than on the word "location." The denial of simple location is the assertion of neither multiple nor complex location; it is the assertion of complex ingression, of which *location* is one single feature. *In fact, in the twenty year period from the publishing of An Enquiry Concerning the Principles of Natural Knowledge till the appearance of his last major work, Modes of Thought,*⁴³ Whitehead did not once say of anything that it is multiply or complexly located.⁴⁴ His record for consistency here is better than it is on other points where he is better understood.

V

What is lost in merely specifying the location of something is adequacy and concreteness. I quote a portion of one passage. The error lies in thinking

you can adequately state the relation of a particular material body to space-time by saying that it is just there, in that place; and, so far as simple location is concerned, there is nothing more to be said on the subject.⁴⁵

⁴¹ SMW, p. 105; italics mine.

⁴² SMW, p. 133.

⁴³ *Modes of Thought (MT)* (New York, 1938).

⁴⁴ E.g. see *Adventures of Ideas (AI)* (New York, 1933), pp. 201-203, and *MT*, p. 188.

⁴⁵ SMW, p. 72.

Let us now turn to the matter of concreteness, which is even less adaptable to the mistaken interpretation of Whitehead's views on simple location. The point is of instructive importance, but it is rarely, if ever, mentioned by the commentators.

I shall argue that among the primary elements of nature as apprehended in our immediate experience, there is no element whatever which possesses this character of simple location. It does not follow, however, that the science of the seventeenth century was simply wrong. I hold that by a process of constructive abstraction we can arrive at abstractions which are the simply-located bits of material, and at other abstractions which are the minds included in the scientific scheme. *Accordingly, the real error is an example of what I have termed: The Fallacy of Misplaced Concreteness.*⁴⁶

The suggestion that the real error is that of misplaced concreteness is not a mere afterthought. Elsewhere Whitehead says,

This simple location of instantaneous material configurations is what Bergson has protested against, . . . I shall in subsequent lectures endeavour to show that this spatialisation is the expression of more concrete facts under the guise of very abstract logical considerations. There is an error; but it is merely the accidental error of mistaking the abstract for the concrete. *It is an example of what I will call the 'Fallacy of Misplaced Concreteness.'*⁴⁷

In both passages the generic character of the Fallacy of Misplaced Concreteness is made quite explicit.⁴⁸ Accordingly, an explanation of simple location may be illuminated by a brief investigation of misplaced concreteness.

The passages are very reminiscent of the earlier period. There the incipient attack on simple location turned on the fact that objects which are thought to be concrete are really abstract and are quite capable of being at several places in diverse ways. The concrete entity was the event. The treatment of concreteness is essentially the same in *Science and the Modern World*: "the whole concept of materialism only applies to very abstract entities,

⁴⁶ SMW, pp. 84-85; italics mine.

⁴⁷ SMW, pp. 74-75; italics mine.

⁴⁸ Another species of the genus is the analysis of nature into substance and quality; see SMW, pp. 76-77.

the products of logical discernment. The concrete enduring entities are organisms,"⁴⁹ including the microorganisms of physics.⁵⁰ These concrete organisms or enduring objects are complex events pervaded by a "structural pattern."

Then the enduring pattern is a pattern of aspects within the complete pattern prehended into the unity of *A*, and it is also a pattern within the complete pattern prehended into the unity of any temporal slice of *A*, such as *B*. For example, a molecule is a pattern exhibited in an event of one minute, and of any second of that minute.⁵¹

Whitehead's philosophy is one which proposes the conception of organisms rather than *material* as fundamental to nature.⁵² It is essential to emphasize, however, that matter is not a chimera; it is an abstraction. And matter does have simple location. Whitehead says, as we have already noticed, that by a process of abstraction we *can* arrive at simply located bits of material and that therefore the error associated with simple location is *really* an example of the Fallacy of Misplaced Concreteness. *For Whitehead there is nothing fallacious about saying that a bit of matter is simply located, provided that you recognize the limitations of not talking about something concrete.* This recognition admittedly entails a discovery that if you give an adequate explanation of matter, you are driven to the more concrete level of events. These events exhibit some characteristics which are collectively abstractable as matter, which has as its only relation to space-time the simple property of being located. *At the same level of analysis where we encounter matter abstracted from events we discover mere location abstracted from all other types of "being at" in space-time.*

⁴⁹ SMW, p. 115.

⁵⁰ SMW, p. 150.

⁵¹ SMW, p. 158; cf. PNK, p. 91. We may not turn aside here except to remark without comment that elsewhere Whitehead's analysis neither entails that a pattern "endure in undifferentiated sameness through time" (SMW, p. 193) nor that any slice, no matter how thin, taken from the life of the enduring object, will yield the total pattern which characterizes that object as a total event (SMW, pp. 196-97). Thus the first appearance of "any" in the above citation is exceptionable.

⁵² SMW, pp. 159, 278, et passim.

What we perceive are essentially spatio-temporal entities, but a bit of matter is an abstraction from a series of events, in neglect of their complex interrelations. An example may serve us in good stead here. Suppose I say that "My dictionary is on my study table now." Unelliptically I mean, or should mean, if I speak concretely, that during some arbitrarily defined present, there is a stream of events characterized by a certain "pattern of aspects," which pattern is passed along from one event to the next, in such a way that the whole set of events comprises the "life" of the book through a certain time. The stream of events will be complexly related to other events, by means which we must investigate shortly. The book thus understood is concrete.⁵³ But suppose I say, "My dictionary is legible." Here the organic character of the enduring object is of less importance. I can deal with a "bit of matter" quite abstractly and without difficulty. The difficulty arises from supposing that the term "my dictionary" was used unequivocally in the two statements. The difficulty is fostered by the possibility of hybrid usages, e.g. "The dictionary on my table now is legible." The suppression of spatio-temporal reference in the second sentence warns us that we are dealing with an abstraction, not an actuality. Years hence I may, in reminiscence, shake my head fondly and say, "Most legible dictionary ever printed."

To sum the foregoing remarks: (1) Whitehead explicitly states that the misconstruing of simple location is really an example of the Fallacy of Misplaced Concreteness. (2) Concreteness belongs to events; enduring objects or organisms, as they are also called, are events composed of temporally sequential events which express the endurance of an inherited "pattern of aspects." (3) The concept of organism is offered as a replacement for matter as the fundamental stuff of the world, partly because the former is essentially spatio-temporal and the latter is not. (4) Matter may, in a sense, be said to be simply located, but can not be said to be concrete; for instance, what I called the hybrid usage, "the dictionary on my table is legible," affirms a property of a simply-located bit of material, and does so without confusion, provided

⁵³ See *SMW*, pp. 158-59. The illustration is mine.

there is only one dictionary, etc. It is when I propose to examine the actual status of my dictionary in a real world of process that I must abandon the simple location of what is essentially an abstract entity, namely the "bit of matter." (5) In conclusion, we may notice that if the misunderstanding of simple location is a kind of misplaced concreteness, and spatio-temporal entities are all concrete, the definition of simple location exclusively in terms of spatio-temporal entities and location in space-time raises the question, "Where does the misplacement come in?" *Prima facie* it seems as though at best there is the suppression of important detail in the definition; at worst the crux of the matter has been ignored. There is no indication in the definition of what is mistakenly thought to be concrete. The actual relationship between the two fallacies is apparent: In mistakenly supposing matter to be concrete we are forced to commit the fallacy of simple location, since matter has only mere location to show when its relations to space-time are demanded of it.

VI

The second motto at the beginning of this paper should warn us that if we pursue the topic of being present in another entity too far we will finish by surveying Whitehead's entire philosophy. But certain questions of immediate peripheral appeal and certain questions raised by the present essay, but not yet answered, must be dealt with briefly.

(1) *Aspects*. Whitehead's cosmological views in *Science and the Modern World* lie partially in a shadow. One reason, as we have seen, is that the term "location," although not explicitly given a technical meaning there, is clearly dominated by the limitations imposed on it in the earlier works. Another reason is that the term "aspect" is used in at least a semi-technical way.⁵⁴ A passage already cited continues: "In a certain sense, everything is everywhere at all times. For every location involves an aspect of

⁵⁴ For instance, Whitehead allowed the term to be separately entered in what is often an inadequate index. The index has three omissions on simple location alone.

itself in every other location. Thus every spatio-temporal standpoint mirrors the world." ⁵⁵ I have italicized the portion of this passage omitted in Mr. Alston's citation of it. The omission alters the sense and discards the term "aspect." Again, Whitehead says,

... the idea of simple location has gone. The things which are grasped into a realised unity, here and now, are not the castle, the cloud, and the planet simply in themselves; but they are the castle, the cloud, and the planet from the standpoint, in space and time, of the prehensive unification. In other words, it is the perspective of the castle over there from the standpoint of the unification here. *It is, therefore, aspects of the castle, the cloud, and the planet which are grasped into unity here.*⁵⁶

The italicized passage, with its reference to "aspects," comes directly after Mr. Alston's citation ends. We notice that an aspect of a location is the same as an aspect of some object at that location; the "aspect" is the way some sense-object makes itself felt somewhere. Thus

A mode of a sense object at *A* (as abstracted from the sense-object whose relationship to *A* the mode is conditioning) is the aspect from *A* of some other region *B*. Thus the sense-object is present in *A* with the mode of location in *B*.⁵⁷

The same idea is repeated elsewhere:

Such an eternal object will be an ingredient of one event under the guise, or aspect, of qualifying another event. There is a reciprocity of aspects, and there are patterns of aspects. Each event corresponds to two such patterns; namely, the pattern of aspects of other events which it grasps into its own unity, and the pattern of its aspects which other events severally grasp into their unities There is thus an intrinsic and an extrinsic reality of an event . . .⁵⁸

The last remarks introduce the general notion of the inter-constitutive character of events, to which we shall return in a

⁵⁵ SMW, p. 133. cited in part by Alston, p. 717.

⁵⁶ SMW, p. 102.

⁵⁷ SMW, p. 103. Notice also, directly preceding this citation, that a "standpoint" is treated both abstractly as a "volume of space through a duration" and concretely as a "unit of realised experience."

⁵⁸ SMW, p. 151.

moment." We notice that the patterns of aspects are evidently the interrelated modes of the eternal objects drawn together in a given event. But any eternal object has many means of entry, which is to say it complexly ingresses, as we have seen. One of these means is the *location* of the object, a simple property in a complex scene.

(2) *Mutual Immanence*. Mr. Alston gives a cogent defense of Whitehead's conception of how one event can be "in" another as an ingredient "feeling" in it. He shows that since actual entities are primarily unities of experience, they draw together in themselves those elements which they feel orprehend and which are constitutive of them. However, he identifies this process of concrescence, as Whitehead calls it, with the assertion of multiple location. I have tried to show that location is only one aspect of the complex phenomenon of ingression. Whitehead nowhere speaks of multiple or complex location, however; he repeatedly speaks of *the* mode of location in terms that indicate that it is only one way in which a sense-object is present in the actual world. Moreover, he condemns simple location on the grounds that it is an inadequate way of indicating how things are related in space-time, and couples it with the notion of matter, an abstraction for which he proposes the substitution of organism. These organisms, or enduring objects, upon analysis reveal interconnections of which the notion of mere location gives no account. From what does this interconnection arise? Whitehead's answer is unequivocal:

An event has to do with all that there is, and in particular with all other events. This interfusion of events is effected by the aspects of those eternal objects, such as colours, sounds, scents, geometrical characters, which are required for nature and are not emergent from it.⁶⁰

Thus an eternal object, by virtue of being polyphase in its in-

⁶⁰ "Intrinsic" and "extrinsic" realities are the progenitors of the "subjective immediacy" and "objective immediacy" cited by Mr. Alston from *PR*.

⁶¹ *SMW*, p. 151. Cf. *PR*, p. 249: "In this sense the solidarity of the universe is based on the relational functioning of eternal objects."

gression, binds together those events into which it ingresses in its various aspects.

In the works that follow *Science and the Modern World*, the "mutual immanence"⁶¹ of events lies in their being constituted of their prehension of one another. Thus it is a name for the inter-constitutivity of events. Mr. Alston identifies this mutual immanence with the denial of simple location. In the first place, however, we have seen that it is objects not events which are primarily said to be located. Secondly, let us examine a passage in *Science and the Modern World* which clearly distinguishes the prehensive features of space-time from the modal ones, that is, those features having to do with location:

Things [says Whitehead] are separated by space, and are separated by time: but they are also together in space, and together in time, even if they be not contemporaneous. I will call these characters the *separative* and the *prehensive* characters of space-time. There is yet a third character of space-time. Everything which is in space receives a definite limitation of some sort, so that in a sense it has just that shape which it does have and no other, also in some sense it is just in this place and in no other. Analogously for time, a thing endures during a certain period, and through no other period. I will call this the *modal* character of space-time. It is evident that the modal character taken by itself gives rise to the idea of simple location. But it must be conjoined with the separative and prehensive characters.⁶²

There are thus three features of events:⁶³ (1) separative,⁶⁴ (2) prehensive, and (3) modal. The prehensive characters are those which testify to the inter-community of events, and the modal characters are those whereby an event possesses spatio-temporal specificity. This last character taken by itself produces the idea of simple location, but it is only one feature of the way things are related in space-time. Thus while it is true that the assertion of mutual immanence is the outcome of the denial of simple location,

⁶¹ This term is not to be found in *PR*, I believe, although the idea is. The term appears first in *AI*.

⁶² *SMW*, pp. 93-94.

⁶³ The use of "space-time" in this passage is only introductory and is shortly repudiated (p. 96) with the suggestion that it is really concrete events which are being discussed.

⁶⁴ These Whitehead calls negative prehensions in *PR*, e.g. pp. 337 ff.

that assertion does not result in the assertion of multiple or even complex location.

We are brought by the above discussion to two final topics.

(3) *Matter and Mind*. Throughout the analysis of simple location and its rejection there is the haunting subject of matter. Several of the important references to simple location speak of matter as simply located and the context is such that we are thus led either directly or indirectly to consider the more inclusive Fallacy of Misplaced Concreteness. We know that matter is mistakenly thought to be concrete; it has given rise to a misunderstanding of the character of simple location. We know that the concept of enduring entity or organism must be substituted for it if our analysis be concrete. Yet we know that by constructive abstraction we can arrive at these simply located bits of matter. What then is matter, properly viewed?

The answer can be given by reference to the foregoing discussion although it can not be directly documented. A bit of matter is some collection of eternal objects considered in the mode of location alone without reference to the other ways in which such objects ingress in other events. As a consequence the spatio-temporality of such matter is found to be an external and accidental feature of it. The concreteness that belongs to events is transferred to material objects. The world then becomes a collection of material objects merely located in various ways in space-time. Over against this world there is the collection of minds victimized by the subjectivity of their own sense-impressions, not to say conceptualizations, yet mysteriously exhibiting some sort of community of thought, and perhaps even more strangely effective in the realization of intensions in this seemingly opaque world.⁴⁴

In the present essay the suppressed feature in the discussion of matter has been the topic of mind. Abstract "mind" is the by-product of misplaced concreteness. If by violence the abstraction "matter" be ripped out of its processive context and be considered concrete, two types of flotsam appear: space-time populated by chunks of this matter, and homeless minds grasping feebly at

⁴⁴ See the remarks in *SMW*, pp. 129-31.

actuality."⁶⁶ Partial remedy for these disruptions lies in the concept of prehension.

(4) *Prehension*. Examination of the early works of Whitehead shows that the doctrine of ingression and the associated theory of location arise as features of an account of perception. In fact, by the time of *The Principle of Relativity* ingression is confined to sense-objects alone. This leaves perceptual objects and scientific objects in the—from the point of view of later developments—uncomfortable position of being what is essentially simply located. Of course, Whitehead does not use that phrase but he says of them that they bear a two-termed relation to the events of which they are adjectives.

The doctrine of prehension arises at least partly to meet this difficulty. Prehension is evidently a generalization of the notion of perception to include the way in which one entity takes account of another, whether cognitively or not. Whitehead quotes from Bacon's *Silva Silvarum*: "It is certain that all bodies whatsoever, though they have no sense, yet they have perception . . ." "⁶⁷ For bodies Whitehead substitutes "events," for perception "prehension." Thus he says, "I will use the word *prehension* for *uncognitive apprehension*: by this I mean *apprehension* which may or may not be cognitive." "⁶⁸ Also, "perception is cognition of prehension. The actual world is a manifold of prehensions . . ." "⁶⁹ Thus the interlocking character of events is secured even in the absence of perception, for instance, that which occurs in mutual influencing of electromagnetic fields. Perception is only a special kind of prehension, which is the fundamental kind of mutual taking account of. The notion of mind is not well developed in *Science and the Modern World*, but there are signs that it is intended to attach to the simplest organisms, far below the cognitive level and may thus be to prehension what cognitive mind is to perception. For example,

I have also sketched an alternative philosophy of science in which *organism* takes the place of *matter*. For this purpose, the mind

⁶⁶ For example, see *SMW*, p. 82.

⁶⁷ *SMW*, p. 60.

⁶⁸ *SMW*, p. 101.

⁶⁹ *SMW*, p. 104.

involved in the materialist theory dissolves into a function of organism. The psychological field then exhibits what an event is in itself. Our bodily event is an unusually complex type of organism and consequently includes cognition.⁷⁰

This is further reinforced by the following:

So far I have merely been considering an actual occasion on the side of its full concreteness. It is this side of the occasion in virtue of which it is an event in nature. But a natural event, in this sense of the term, is only an abstraction from a complete actual occasion. A complete occasion includes that which in cognitive experience takes the form of memory, anticipation, imagination, and thought.⁷¹

VII

With these fragmentary abbreviations of topics related to the denial of simple location, the present essay must be brought to an abrupt conclusion. The philosophical horse has been mounted and his rider is apparently considering all points of the compass for simultaneous adventure.

The discussion has been advanced as constructively as possible—constructive, that is, to Whitehead's intention. But a host of problems have been raised that carry us beyond *Science and the Modern World* to *Process and Reality* and even further. We are uncomfortable at the suggestion of mentality, even metaphorically conceived, as attaching to entities called by Whitehead organisms, but ordinarily regarded as non-organic. Again, what is the relation of sense-objects to insensible enduring entities, the electronic and protonic societies of physical analysis? Also, what of the realm of eternal objects; does it include what might be called "prehensive objects" that function for events merely prehensively enmeshed with one another (in the fashion that sense-objects function for events related in the matrix of perception)? These are only a few of the questions which can be asked. The answers, if they are satisfactory, can only be got from the works which follow *Science and the Modern World*, especially

⁷⁰ SMW, p. 278.

⁷¹ SMW, p. 246.

Process and Reality. That work is in need of illumination. It's very dark in there.

The present study is one of a series intended to provide preliminary study and analysis for *Process and Reality*. Whitehead's *magnum opus* has its votaries, some of whom have successfully sketched the main outlines of a vast system. But as yet no explicator has come forward to apply the system specifically to the persistent metaphysical problems which it was at least partly designed to overcome.

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CRITICAL STUDIES

A COMMENTARY ON ARISTOTLE'S ETHICS

RICHARD TAYLOR

THIS book, representing in substance lectures delivered by Professor Joachim during the years 1902-1917, will be welcomed as one of the clearest analyses of the *Nicomachean Ethics* to appear in our language.¹ Although Joachim apparently did nothing to his lectures after 1919 (they were only discovered after his death some twenty years later), they were nevertheless quite complete when found. They have now been brought up to date by Mr. Rees, through the addition of references to the more recent studies and to the *Eudemian Ethics*, which Joachim seems to have thought spurious. Mr. Rees has also wisely pruned from the text Joachim's own excursions, written from his early philosophical viewpoint, into the problems raised. The result is an admirably well-balanced and detailed analysis and interpretation of Aristotle's entire ethical system, considered almost line by line. Where an understanding of doctrines from the other of Aristotle's writings is needed in order to render intelligible the more puzzling of his ethical theories, such doctrines are carefully set forth and interpreted, thus enabling one to see Aristotle's moral philosophy as an integral part of his entire systematic thought.

Since nearly all the book is devoted to a systematic unraveling of the *Ethics*, it would be futile and pointless to try summarizing much of it. Brief attention will therefore be directed to but a few of Joachim's discussions, particularly as they bear upon controversial points of interpretation.

One such controversial issue is yielded by Aristotle's own fundamental division of the "sciences" (*θεωρητική, πρακτική, ποιητική*), based in part on a classification of things into those which can, and those which cannot, be otherwise. Human actions of course, belong to the first class—hence the impossibility of a

¹ Aristotle : *The Nicomachean Ethics*. A commentary by the late H. H. Joachim, edited by D. A. Rees (Oxford, Clarendon Press, 1951).

theoretical science of conduct. But what conception of possibility underlay this distinction? Does it imply a genuine indeterminateness in a certain kind of causal relation, or only a possibility relative to our own ignorance of the complex laws and factors involved? Readers almost invariably assume that the latter is intended, that chance ($\tau\acute{\upsilon}\chi\eta$) is no separate causal agency, but is invoked only to express ignorance of the causes involved, with a correlative inability to predict. That this was sometimes Aristotle's view is beyond question, particularly in the light of his explicit reduction of chance and luck to unknown causes occasionally encountered in telic activity. But, Joachim convincingly shows (pp. 24-26; cf. p. 205n.), Aristotle held another view as well, according to which "chance" does not indeed designate a fifth kind of explanatory principle, but the actual absence of necessary connections in things themselves, viz., within the sphere of deliberation and purpose. Thus, if we consider a course of conduct in retrospect, it is often not hard to see it as a regular series of causes and effects; but in looking forward upon the possible behavior of an agent, it is sometimes impossible to predict what conduct will ensue because some links of the process may lead indeterminately to one of two or more possible effects. It is indeed true *now* that an anticipated naval battle either will or will not occur; but since this event depends on the deliberations of men, it is neither true now that it will, nor that it will not. Such an event belongs within the sphere of "things that can be otherwise" ($\tau\acute{\alpha}$ ἐνδεχόμενα καὶ ἄλλως εἶναι), i.e., things that follow no necessary rule, because of an indeterminateness inherent in deliberation. Whatever one may think of this as a metaphysical principle, Joachim does show that Aristotle appears at times to have endorsed it.

Essentially the same equivocation recurs, according to Joachim (pp. 107-111), in Aristotle's conception of self-determination. Here Aristotle is generally understood to have held that we are (sometimes) genuinely free—e.g., in electing a course of action—but only in the sense that our actions follow necessarily ($\epsilonἰς$ ἀνάγκη) from our own characters. This is a conception of freedom now regarded by many as almost axiomatic. Aristotle's view was actually much more complicated, however, and rested in

part upon his distinction (adumbrated by Plato) between rational and non-rational capacities (*δυνάμεις μετὰ λόγου* and *δυνάμεις ἄλογαι*). Non-rational capacities, which are the only ones possessed by inanimate things, are potentialities such that, under given circumstances, one and only one actuality can ensue; whereas rational ones, exhibited in men, are always indeterminate potentialities for opposites (*δυνάμεις τῶν ἐναντίων*). Thus, if paper is brought into contact with fire, it can only burn, not melt. A physician's capacity to cure, on the other hand, can express itself in poisoning; one's capacity to safeguard things might manifest itself in theft. Now of course such ambiguous potentialities do not simply realize themselves spontaneously, apart from any moving cause; they are brought to actuality by a supervenient factor, viz., the impulse or purpose (*ὁρεξις ἢ προαίρεσις*) of the agent. Hence, it might be thought that this determines the capacity to a determinate expression. Passages can be cited in support of this *prima facie* reasonable interpretation, but, unhappily, others can be found wherein Aristotle seems clearly to imply something else, viz., that though *προαίρεσις* is in fact the determining factor of responsible conduct, it is itself amenable to no determination and no law. It seems doubtful to Joachim, for instance, whether the distinction between things which can, and those which cannot be otherwise, can really be pressed without some such supposition. Elsewhere, however, he expresses some dissatisfaction with this whole notion, suggesting that what Aristotle has done is to confuse different levels of our knowledge of things with a difference in the things themselves (p. 169). The statement, e.g., that one's hair greys with age, formulates no invariable sequence, and thus describes no necessary feature of reality; yet this by itself plainly does not imply a real contingency in things.

Joachim again departs from a frequent interpretation in rendering the important expression, *τίς ἐστὶν ὁ ὀρθὸς λόγος καὶ τούτου τίς ὁρὸς* (1138b34), which formulates the initial problem of Book VI, as "What is the right rule, i.e., what is the limit (the ultimate standard) determining it," rather than (reading *ὁρισμός*) "What is the right rule, i.e., what is its definition." But the translation itself is not as significant as the view underlying it, which Joachim ascribes to Aristotle. Here, and elsewhere (e.g., iii-1114b29),

there appears to be a quasi-personification of $\delta\rho\theta\acute{o}\varsigma \lambda\acute{o}\gamma\omicron\varsigma$, as something which "prescribes" or "dictates," inclining the reader to identify it with "practical wisdom" ($\varphi\rho\acute{o}\nu\eta\sigma\iota\varsigma$), whereas in many other contexts it seems clearly to mean, not the wisdom itself, but rather the rule or proportion, determining rightness, which a practically wise man ($\varphi\rho\acute{o}\nu\iota\mu\omicron\varsigma$) apprehends. Joachim maintains, however, that there is really no equivocation here at all, that the right rule and the knowledge of it are, for Aristotle, one and the same and that, moreover, this view of Aristotle's is in fact correct (p. 166). Aristotle did not, in other words, assume a basic antithesis between a thing known and the knowing of it, but repeatedly stressed their identity; that which constitutes a right rule of action, or the form ($\epsilon\acute{\iota}\delta\omicron\varsigma$) of a substance, is what a right action, or a substance, essentially is; and this same rule or form, and not merely the apprehension of it, is, when known, the literal content of the soul.

Joachim's penetrating discussions of the role of reason in conduct, and of the difficulties attending Aristotle's various conceptions of this, are similarly suggestive. As an instance can be cited his rather detailed consideration of what he calls Aristotle's "practical syllogism," i.e., syllogistic reasoning as applied to decisions. Here the author shows that, insofar as such a "syllogism" would require a conclusion formulating a particular purpose or choice, of the form "this here and now should be done by me," it would likewise require a singular minor term and minor premiss, and would thus be "a monstrosity from the point of view of Aristotle's theory of knowledge" (p. 209). But it is further suggested that this apparently radical inconsistency in the philosopher's thought can in part be removed by supposing a kind of knowledge which is neither practical wisdom ($\varphi\rho\acute{o}\nu\eta\sigma\iota\varsigma$, which is always the apprehension of some action as falling under a general principle), nor science ($\epsilon\pi\iota\sigma\tau\acute{\eta}\mu\eta$), nor perception ($\alpha\acute{\iota}\sigma\theta\eta\sigma\iota\varsigma$), but something rather in between the latter two, whereby one "sees," but not by sense, that this or that act should be done. Aristotle has no special name for this kind of "seeing"; he simply says that, somewhat as a scientist apprehends immediately the first principles of scientific proofs, so also the $\varphi\rho\acute{o}\nu\iota\mu\omicron\varsigma$ has an immediate "judgment" or "conception" ($\acute{\upsilon}\pi\omicron\lambda\eta\psi\iota\varsigma$) of the "major premiss" of conduct.

Of somewhat wider significance is Joachim's lengthy analysis of the Aristotelian doctrines of the nature, conditions and worth of pleasure. He shows that Aristotle maintained, against some of his predecessors, that pleasure is not at all a process of becoming complete, nor is it essentially a change, nor even dependent on time. It is, to use Aristotle's own analogy, more like an act of vision, which is, certainly, the realization or activity (*ἐνέργεια*) of a potentiality, but one which results from no process. The capacity to see does indeed require process for its coming to be, but this is a pre-natal one; there is, once the capacity is given, no further *passage* to the act of seeing, but simply an instantaneous manifestation. In the case of the activity of pleasure, similarly, it is a confusion to regard it as itself a process (*κίνησις*), for in any process there is a gradual completing or perfecting (*τελείωσις*), every stage of which represents an advance on a preceding one, and every stage of which is therefore itself incomplete. Pleasure is something complete or "perfect" (*τέλειόν τι*), and its character is fully manifest whenever the pleasure *is* at all; at no moment does it point beyond itself for its completed coming to be, and in no sense is it generated in a temporal process: "Pleasure has no parts, but *is*—when it *is* at all—all at once and completely" (p. 277). Concerning the conditions of pleasure, Joachim points out that it is the normal accompaniment of any conscious activity, *qua* unimpeded, and hence not itself an activity that can be separately pursued; the conditions for the completeness, or uninhibitedness, of conscious activity are themselves the conditions of pleasure. From this is drawn the familiar corollary that the worth of pleasure is not something intrinsic to it, but depends in part upon its source, i.e., upon the normal worth of the activity itself.

This analysis sufficiently indicates the subordinate relation of pleasure, in Aristotle's thinking, to man's chief good, the conception of which, of course, he seeks through a consideration of a distinctive function (*ἔργον*). In this connection Joachim early in his *Commentary* (p. 50) makes the point that it is moral virtue, and not intellectual virtue, which is distinctively human, that contemplation (*θεωρία*) is not something proper to man as such, but only *qua* possessing intellect (*νοῦς*), which is itself of a divine

nature. And this conception, somewhat vaguely expressed in the *Ethics*, brings up the whole vexatious question of the exact nature of νοῦς, and particularly the question of its relationship to the living body which it somehow informs.

Joachim deals with this problem at some length in his analysis of Book X, drawing heavily upon the *De Anima*, and claiming that Aristotle held no single, self-consistent view, even in the vague and uncertain statements of the *Ethics*. For on the one hand, Aristotle seems characteristically to have regarded the νοῦς, like any other enmattered form, as that power distinctively characterizing the soul of man, and hence as the form of the animate substance whose matter is the human body—in which case νοῦς and its functions would be inseparable, except rationally, from the composite of which it is the form. Such a view still permits one to regard the νοῦς as "eternal," but only in the attenuated sense that the form, say, of a vase is such; viz., in the negative sense that it is not subject to temporal process, and hence undergoes no generation or decay (γένεσις or φθορά). Nevertheless, like the form of *this* vase, we would have to say that there is a time when it is, and a time when it is not.

Our author rightly argues, however, that the view just sketched is not the one implied in Book X. Here, the νοῦς appears to be thought of as akin to the pure forms of the celestial spheres, something *in* us, which is nonetheless not strictly part of us; a *forma assistens*, related to the body somewhat as a pilot to a ship. Considered as such, the νοῦς would be independent of material conditions in its being, and would be eternal, not merely in the wider sense indicated above, but in a more ordinary sense of being timeless and deathless.

Quite apart from the difficulties of either view, it appears impossible to reconcile them to each other, and Joachim does not attempt to. He does, however, offer the following suggestions (pp. 289-291).

In the *De Anima*, he points out, the philosopher considers judging, reasoning and remembering as, like the emotions, functions of the embodied soul, while intuitive thought and contemplation (νόησις and θεωρία) are regarded as the function of νοῦς, i.e., of a power operating in the soul, but independent of

the body in its being and functions. This permits us to suppose that while the $\nu\omicron\upsilon\varsigma$, unlike, e.g., reason and feeling, is not directly tied up with conditions of the body, these latter, when unfavorable—as in drunkenness, disease, etc.—can prevent one from experiencing the activity of $\nu\omicron\upsilon\varsigma$ within him, as if by the interposition of a veil. On such a conception, the $\nu\omicron\upsilon\varsigma$ can be thought of as a contemplative and intuitive power in a composite man, which is nevertheless not dependent, for its being, upon the being of the composite. And even though the disease or destruction of one's body may in an obvious way destroy his noetic power, it need not follow that the $\nu\omicron\upsilon\varsigma$ is itself thereby affected. The chief difficulty remaining in all this is, however, that while the survival of something in man is thus rendered possible, what might thus survive is not something personal nor even distinctively human, since memory and all else that characterizes individual human personality will have perished. It is, indeed, something divine, and not, therefore, *man's* eternity, much less the eternity of this or that man.

Such are the results of a few of Joachim's very thorough analyses, most inadequately sketched here. If I were to cast about for an interpretation from which I might dissent, it would perhaps be Joachim's repeated attempt (e.g., pp. 107-108; 186-188; 203) to assimilate formal and final causes, in human activity, to efficient ones, on the basis of the claim that the former are the actual contents of the agent's soul, and that they thus in part initiate telic activity—an interpretation which is dubious. This is, however, far from being a central point.

It must also be emphasized that only the smallest sampling of Joachim's discussions has here been selected for comment, and that most of these are by no means the more important ones. No mention has been made, for instance, of his elaborate analyses of Aristotle's discussions of justice, friendship, moral responsibility, or deliberation, the very length and detail of which prohibit summary or comment in a review of this sort. But it is hoped that some indication has been given of the great value his book should have to serious students of the *Ethics*, and of the skill, judgment and learning which Mr. Rees has applied to the difficult task of editing it.

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CONDILLAC'S PHILOSOPHICAL WORKS

HERBERT DIECKMANN

THOSE who have read Condillac's *Essai sur l'origine des connaissances humaines* or his *Traité des sensations* in the small editions of Lenoir or Picavet and have consulted the 1798 edition of the complete works of Condillac, will feel upon opening the present edition that Condillac has acquired a new dignity: ¹ his writings are included in a *Corpus generalis* and presented in a format which reminds one of the venerable in-folios in which we read the works of the Fathers of the Church or the great Scholastics. The variants of the text are listed at the bottom of the page together with the comments of the new editor Professor Le Roy. As one thumbs through the two heavy volumes and glances at the text, which is arranged in two columns, neatly divided into paragraphs, with headings that read like a series of theses which a rationalist philosopher of the Renaissance might propose for a defence, one has at first the impression that the eighteenth-century *abbé* has been lifted out of his period. In the judgment of the Age of Enlightenment ponderous volumes with learned comments were the manifestation of scholastic thinking and the cumbersome erudition of the past, which had to be overcome and eliminated. Another spirit was coming into being, a spirit whose swiftness, mobility, rapier-like flexibility and elegance could be embodied in small, portable volumes which could be read while sitting in a café or walking. To be sure, there was the *Encyclopédie* with its heavy in-folios. But did not many *philosophes*, above all Voltaire, feel that these monumental volumes crushed the soul which inhabited them and even suggested a return to a former period!

And yet, as one advances further in the present edition, one realizes that in several respects its format fits Condillac's thought surprisingly well, particularly his rigorous, intransigent rationalism and his strong sense of the structure of thought.

¹ *Œuvres philosophiques de Condillac*. Edited by Georges Le Roy. (Paris, Presses universitaires de France, 1947-48).

Condillac's starting point is in Locke's empiricism and in a determined anti-metaphysical and anti-systematic conviction; he set out to go beyond even Locke's *tabula rasa* sensationalism. Not only should the entire content of our mind be traced back to sense impressions which had been received from objects outside of us or by inner impressions, but even the faculties and acts of the mind which transform these data into ideas should be explained as the effect of characteristics that are inherent in sensations. This was the thesis and the intent. But as Condillac's philosophy developed, the constructive, Cartesian forces of his mind, his almost passionate demand for precision, mathematical cogency and radical analysis became more and more prevalent. Already the subtitle of the 1746 edition of the *Essai sur l'origine des connaissances humaines* announces the Cartesian heritage or parentage; the subtitle reads: "ouvrage où l'on réduit à un seul principe tout ce qui concerne l'entendement."

The new edition has not only the advantage of making all the important writings of Condillac available in two compact volumes, but also of presenting them with the variants from earlier editions and with comments. Only the strictly historical parts of the *Cours d'études*, a work which Condillac composed for his pupil, the infant Don Ferdinand of Parma, have been omitted from the present edition; the editor included, however, the sections on the history of philosophy and those on the great cultural movements. Moreover, the chapter headings of the parts omitted have been listed in great detail in the table of contents. Few readers, if any, will regret the omissions, for Condillac was least of all an historian and almost everywhere in his history he seems to have chosen a form of expression which corresponded to his pupil's average level of intelligence. Some writings by Condillac, not to be found in the standard edition of 1798, have been added to the present one: the articles from the *Dictionnaire des synonymes* and a few of his letters which had been published before in various books and periodicals and which are here brought together for the first time. The letters, as a rule, are somewhat disappointing; they do not throw much new light on Condillac's thought or personality. However, even their neutral character will be of interest to those who wish to form an idea of Condillac as a person.

Occasionally, a passage emphasizes a characteristic feature of the philosopher: when Condillac acknowledges the receipt of various pieces of artillery and of the material for the demonstration of military strategy (they were sent for the instruction of the young prince), he comments: "tout y est exécuté avec une grande netteté et une grande précision. Rien n'est plus instructif; et cela me donne envie d'apprendre la guerre" (Lettre à Dutillot). We have here an amusing instance of Condillac's love of precision and constructive planning, a love which won over a shy and retiring temperament to the art of warfare. Of particular interest is the letter of January 23, 1779, to Comte Potocki, in which Condillac defends his philosophic position. He refutes the objection that the soul is completely passive in his theory of the formation of our ideas and that all action is left to the impressions which objects make on our senses. Condillac objects that precisely in his system the soul is endowed with a high degree of activity and that the reproach of passivity of the soul can reasonably be addressed only to the system that presupposes innate ideas. Since the reproach which Condillac answers here has been addressed to his philosophy almost consistently by his critics, it is interesting to see that he was aware of the objection and countered it with a number of striking arguments which the future discussion of the issue will have to take into consideration.

The text of the present edition is that of the *Oeuvres de Condillac*, published in 1798 from the autograph manuscripts which had been revised by the author himself. This text varies from that of the first printed editions. Professor Le Roy states in his preface that he re-examined the autograph manuscripts, verified the corrections and compared both with the 1798 edition. He found several errors which he corrected in his edition. The variants throw an interesting light on the manner in which Condillac revised his ideas and his style; they vary in number and importance in his different works. The *Traité des systèmes* and *Le commerce et le gouvernement* for instance contain a great number of significant variants, while the *Essai* and Books I and VI of the *Cours d'études* show only a few; the *Traité des animaux* occupies a position between the two groups. In a number of cases the variants are of considerable philosophic interest: for

example, the idea that we acquire the certitude of the existence of an outer world by the experience of an obstacle outside of us, appears only in the 1798 text. The later development of this idea particularly by Maine de Biran is well known. Professor Le Roy might have mentioned that the variants of the *Traité des sensations* had already been published by F. Picavet in his excellent edition of that work and that Lenoir in his edition of the *Essai sur l'origine des connaissances humaines* stated categorically that there were no variants among the different editions. ("Le rapprochement des éditions atteste qu'aucune correction ou addition n'a été faite par Condillac.") It is true that the number of variants is very small in the *Essai*; still, as Le Roy shows, the end of the *Section seconde* was entirely rewritten.

The notes of the present edition are predominantly historical; they clarify all the points where information on the general background and on Condillac's contemporaries is required. Some readers might have welcomed a more detailed and specific discussion of philosophic issues and a comparison between Condillac's ideas and methods with those of his immediate predecessors and of his contemporaries. The notes are also of little help whenever the knowledge of the implications of certain concepts and terms is indispensable for an accurate understanding of Condillac's thought. The reader of the *Traité des sensations* will still find it very profitable to consult Picavet's comments. In his introduction Professor Le Roy promises a bibliography, an index of proper names and an analytical table at the end of the second volume. I have looked for them in vain in my copy.

The author's introduction is rather summary and conventional in character; he commences with a biographical sketch which does not go beyond the scope of an article in a cyclopedia. This is followed by a chapter on the development of Condillac's thought: first a section on the influences which Condillac underwent, then a series of brief synopses of the major works in chronological order; an evaluation of Condillac's philosophic "temperament" serves as a conclusion. This traditional form of presentation has its place in a general history of eighteenth-century thought, where the reader wishes to find a well informed survey of the life and ideas of an author. A preface to a great and representative edition

called for a more serious, original and critical discussion of the principles and methods of Condillac's philosophy. Moreover Professor Le Roy follows the conventional line of presenting Condillac as a disciple of Locke and Newton, a radical opponent of Descartes and an enemy of metaphysical and systematic philosophy; Condillac's work is said to be a mixture of psychological analysis and logical systematization; in his later years Condillac sacrificed his sense of the importance of experience to his desire for strict coherence, logical order and mathematical simplification. All this is undoubtedly correct in a general way, but it does not go beyond the evident features and often stated purpose of Condillac's writings. It is surprising to see that Professor Le Roy expresses himself so negatively on Condillac's relation to Descartes, since in his book *La psychologie de Condillac* he has shown the importance of both Descartes and Leibniz for Condillac. To be sure, Condillac stated his goal, his method and his criteria repeatedly with such clarity and precision, that the historian has to resist the temptation of paraphrasing Condillac's self-interpretation. However, if one does not go beyond Condillac's avowed purpose and intent, one cannot penetrate to the roots of his thought, and explain his logical radicalism, his belief in a universally valid procedure: the tracing of the genesis of our ideas, a procedure which in his opinion would solve all logical, ethical, esthetic and pedagogical problems. There existed in Condillac, who according to all we know was a mild mannered, considerate and retiring person, an intellectual intransigence of revolutionary force. He did not hesitate to eliminate centuries of tradition and culture by his radical analysis. No mention of this is made in Professor Le Roy's introduction; he neither gives an interpretation of Condillac in the perspective of the eighteenth century nor in a modern perspective. An example of the latter can be found in the study of R. Mondolfo, "Spazio e tempo nella psicologia di Condillac."²

There is a large and important part of Condillac's work

² *Rivista filosofica* (1902).

which cannot be summarized or defined in terms of the principles or main themes of his philosophy and which should attract fuller attention. The editor might have mentioned this feature since it adds much significance to the present publication. Condillac was a keen observer and possessed in a high degree the gift of psychological analysis. His writings, even if one dismisses his fundamental theses, contain a wealth of pertinent and profound insights into the working of the human mind, the movement, motives and structure of our feelings. One may disagree with Condillac on many of his favorite issues, one may judge severely his philosophic shortcomings and yet read his critical and analytical observations with great interest and profit. His reflections on language are a good case in point, for despite his somewhat narrow nominalistic thesis and the prevalence of philosophic over linguistic considerations, he had many excellent ideas on the origin, the formation and the various forms of language. When he said that he had learned more about the mind from his reading of the great works of literature than from philosophical treatises, he was not just paying tribute to a cultural tradition or the ideal of the *honnête homme*. His *Cours d'études* is a constant illustration of his close reading of literary texts and his fine analysis of style and forms of expression.

In the concluding section of his introduction, Professor Le Roy discusses Condillac's influence; but only that on Maine de Biran is dealt with in detail. The author moves along traditional and well known lines and the student who wishes specific information will have to turn to R. Lenoir's book on Condillac. It is surprising that no mention is made of the influence which Condillac's *Logique* and his principles of terminology exerted in the domain of science. Lavoisier, for instance, acknowledged his indebtedness to Condillac, whose ideas he followed in his establishment of a nomenclature of chemistry. (See the beginning of Lavoisier's *Discours préliminaire*, which introduces his *Traité élémentaire de chimie*.) Also Condillac's influence on literary authors receives no attention in this section, though it is fairly evident in a number of cases, as, e.g., that of Stendhal.

Despite these shortcomings Professor Le Roy's publication of a critical and annotated text of Condillac's works is an important contribution to eighteenth-century scholarship. The historian and student of philosophy and of the Age of Enlightenment will welcome this new edition and the many excellent and stimulating comments of its editor.

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THE CHALLENGE OF THE HISTORY OF SCIENCE:

PART II

JAMES HADEN

VI

In the preceding portion of this study¹ a progressive unification of the historiography of science and of philosophy was urged. Certain newer and older works in the history of science were examined, with the conclusion that none of them could be considered more than a preliminary essay toward an adequate history of science. It is therefore a pleasure to deal now with two recent works which are exemplars of the maturity of the writing of the history of science.² Both are by the same author, and are devoted to similar topics; nevertheless each has its own individuality and distinct worth, enhanced by juxtaposing each with the other.

The character of these books should be less unexpected when one notes that their author, A. C. Crombie, is not only lecturer in the Department of History and Philosophy of Science, University College, London, but is also the editor of *The British Journal for the Philosophy of Science*.³ One would expect, then, that his approach to the problems of the philosophy of science would naturally proceed through the history of science, and that he would be less interested in elaborating the details of a particular doctrine in the philosophy of science than in viewing the events of the history of science in their larger aspects, aspects which merge insensibly into the phases of the history of philosophy. And just this is the case.

¹ See this journal, VII, pp. 74-88.

² A. C. Crombie: *Augustine to Galileo. The History of Science A.D. 400-1650* (London, Falcon Educational Books, 1952). (Hereafter cited as *Augustine*.) *Robert Grosseteste and the Origins of Experimental Science, 1100-1700* (Oxford, Oxford University Press, 1953). (Hereafter cited as *Robert Grosseteste*.)

³ Founded in 1950.

Crombie's interpretation of the nature of science is in fact moderate:

The philosophical truth that the whole history of experimental science since the thirteenth century has brought to light is that the experimental method, originally designed as a method of discovering the true causes of observed occurrences, or facts, turns out to be a method of constructing true descriptions of them. A scientific theory has provided the whole of the explanation that can be asked from it when it has correlated the facts of experience as accurately, completely, and conveniently as possible. Any further questions that may be asked about the facts cannot be asked in the language of science. Of its nature such a description is provisional, and the practical programme of research is to replace limited theories by other ever more comprehensive.⁴

One immediate result of this position is, as Crombie notes, to scotch the impulse to draw unlimited metaphysical implications from science.⁵ Science, however successful it may be in its own sphere, cannot claim to govern the whole of philosophy. In short, "there is nothing in the scientific method that either denies or affirms the validity of other methods of making sense of experience, or the attainability of objective truth. Science can provide no capital for either theologians or atheists, moralists or libertines." ⁶ The basis for this conclusion is the assertion that science is, as Kant said, a constructive activity—although the neatness and immutability of the Kantian categories is gone forever. And as with Kant, this interpretation of science gives room for the other parts of philosophical thought.

This is not to say that Crombie views the activities of science and philosophy with naïveté; he is well aware of prevalent philosophies, although he avoids either commitment to or clash with them. It is not too hard to tell what was in his mind (and that his tongue was probably in his cheek, as well) when he noted, before launching into the main discourse of the book on Grosse-teste: "The word 'fact' I have used without distinction to mean

⁴ Robert Grosseteste, p. 319.

⁵ The theologians' tendency to regard cosmogonies which infer an aboriginal cosmic "explosion" (E.g. Le Maitre, and Gamow) as evidence for certain religious doctrines is a case in point.

⁶ Augustine, pp. 402-403.

either 'an observed occurrence (or regularity)' or 'a statement describing an observed occurrence (or regularity)'." ⁷

Historical study supports his philosophical position. The central thesis, stated most clearly in *Robert Grosseteste*, "is that the modern, systematic understanding of at least the qualitative aspects of [the experimental] method was created by the philosophers of the West in the thirteenth century. It was they who transformed the Greek geometrical method into the experimental science of the modern world." ⁸ The same general thesis runs through *Augustine* as well.

Crombie sees the Greeks—Plato and Aristotle in particular—as providing certain accomplishments in the theory and method of natural science which were altered during the High Scholastic period into a firm basis for the modern science of the 17th and later centuries. He thus allies himself with those who maintain that the achievements of the Renaissance and early Baroque age were not sheerly due to a return to the Greek writers in their purity, unclouded by medieval "superstition." ⁹ Briefly, Crombie holds that in Greek natural science the central question concerned the existence and nature of an enduring stuff behind the shifting world of appearances, and that this was answered in terms of substances, by Aristotle in particular. The development of the geometrical method of proof, proceeding from propositions laid down at the outset to theorems rigorously derived therefrom ¹⁰ became allied with the doctrine of substance so that, in Aristotle especially, natural science became demonstration from definitions of sub-

⁷ *Robert Grosseteste*, p. xii. See also the selected bibliography in the philosophy of science in *Augustine* (p. 404) for an idea of Crombie's breadth of sympathies.

⁸ *Robert Grosseteste*, p. 1.

⁹ See, for example, George Clarke Sellery's book, *The Renaissance, Its Nature and Origins* (Madison, Wis., 1950), where this question is diligently argued. Sellery is also on the side of continuity and opposed to the Burckhardtian notion of a spontaneous efflorescence in the Renaissance. He gives the appropriate references for understanding the issues involved. Crombie says, in fact, that Renaissance humanism "was an interruption in the development of science" (*Augustine*, p. 268).

¹⁰ Not with complete rigor, of course, as modern geometrical researches by Hilbert and others have shown, but nevertheless the Greeks set the medieval standards of deductive reasoning.

stances. These definitions were the Greek form of a theory of matter.

As Crombie accurately notes, "this method was effective provided that premisses for the demonstration were fairly obvious and could be accurately formulated. Often they were based on simple experiments. The main defect of the method was that it contained no procedures for dealing with problems involving many variables. As a result, the Greeks formed the habit of basing theories about complicated phenomena on casual and common-sense observation."¹¹ There was also the principle of "saving the phenomena," which together with the defect in method just noted led to overelaborate theoretical structures. This was aggravated by the prevailing belief that science was searching into a real world lying behind appearances. Still, the way was left open for the abandonment of the search for a hidden reality for the simpler task of correlating phenomena.

Aristotle also opened up the systematic inquiry into inductive method, as the route by which the basic definitions employed as syllogistic premisses were to be obtained. Starting from sense knowledge, which is the more knowable to us, one proceeds to knowledge of principles and essences, which are more knowable in themselves. But although he recognized on several occasions the uncertainties involved in formulating premisses, Aristotle insisted on this less strongly than did Plato; "demonstration" as a mode of scientific exposition crystallizes more readily into dogma than does a "likely story." It is because Aristotle was great enough to transcend this tendency that he was the founder of both scholasticism and science. Indeed, as Crombie points out, the most devastating criticism of Aristotle

developed from within the Aristotelian system of scientific thought itself and, indeed, Aristotle can be seen as a sort of tragic hero striding through medieval science. From Grosseteste to Galileo he occupied the centre of the stage, seducing men's minds by the magical promise of his concepts, exciting their passions and dividing them, and, in the end, forcing them to turn against him as the real consequences of his undertaking became clear; and yet, from the depths of

¹¹ Robert Grosseteste, p. 7.

his own system, providing many of the weapons with which he was attacked.¹²

Aristotle's immediate contribution was the concept of rational explanation, taking the place of the Dark Ages' preference for mystical symbol and analogical explanation. These men of the high middle ages do not cease to look on the world as in some sense sacramental, but they begin to advance the method of discursive demonstration alongside the older forms. "In the 12th century," Crombie says, "this notion of rational explanation developed first among logicians and philosophers not primarily concerned with natural science at all but engaged in grasping and expounding the principles, first, of the *logica vetus* or 'old logic' based on Boethius and, later in the century, of Aristotle's *Posterior Analytics* and various works of Galen."¹³ The *Posterior Analytics*, which proved one of the most fertile sources of inspiration for the development of the theory of scientific method, was made available in Latin translation only in the 12th century.¹⁴

Crombie further maintains that Robert Grosseteste bestrides this crucial transitional period in a unique fashion, and that he is to be considered the effective initiator of the 13th century upsurge of science. Grosseteste is not a forgotten or even neglected figure in medieval history. Studies on his life and thought have been written on several occasions.¹⁵ He was the first Chancellor of Oxford, the Bishop of Lincoln and a vigorous and able churchman. Yet although his disciple, Roger Bacon,¹⁶ refers to Grosseteste in terms so flattering as to amount to adulation,¹⁷ Bacon himself has engaged far more attention on the part of scholars and the public.

¹² *Augustine*, p. 212.

¹³ *Augustine*, p. 213.

¹⁴ There were two versions from the Greek, and one from Arabic. See the useful table of translations and their dates in *Augustine*, pp. 23-30.

¹⁵ E. g., S. Pegge: *The Life of Robert Grosseteste* (London, 1793); Ludwig Baur: *Die Philosophie des Robert Grosseteste* (Münster, 1914); S. H. Thomson, *The Writings of Robert Grosseteste, Bishop of Lincoln* (Cambridge, 1940).

¹⁶ It is not positive that Bacon was actually a *pupil* of Grosseteste, although he undoubtedly made an exceptionally close study of his writings.

¹⁷ In his *Compendium Studium*, for instance, Bacon said that Grosseteste "prae aliis hominibus scivit scientias." (Quoted in *Robert Grosseteste*, p. 43 n.)

Despite George Sarton's statement that "we may say that he [Grosseteste] influenced the whole western world, partly through his own writings, and partly through these new tendencies emphasized by Bacon and others,"¹⁸ detailed substantiation of this has been lacking.

Crombie's new study of Grosseteste is distinguished from the others chiefly by one essential: he makes a detailed analysis of Grosseteste's theory of scientific method based on the latter's commentary on the *Posterior Analytics*. This was not previously done.¹⁹ In fact, the standard edition of Grosseteste's philosophical works²⁰ does not print this commentary, although it is extant in several 15th and 16th century printed editions, as well as in manuscript versions.²¹ Here is a concrete case where the pursuit of the history of science makes a perceptible difference in the estimate of a man previously studied by students of the history of philosophy. It is impossible to believe that Baur would not have reprinted the commentary on the *Posterior Analytics* had he considered it important. But instead, the orthodox interpretation of Grosseteste stresses his Augustinian metaphysics of light, not occupying itself with the extent of his debt to Aristotle. Since Baur's edition of his works has been the only readily available one, this is hardly surprising, although it is a pity to find even so eminent a historian of science as Lynn Thorndike²² falling into the same blunder. Charles Singer, although he calls Grosseteste the "most arresting" of the early group of "consciously forward-looking" Franciscan thinkers, can say only this about him:

Grosseteste determined the main direction of physical interests during the thirteenth century. He knew something of the action of mirrors

¹⁸ *Introduction to the History of Science*, II, Part II, p. 583. Sarton gives Roger Bacon five times the space Grosseteste occupies.

¹⁹ Pierre Duhem is an apparent exception. (See *Le Système du Monde: Histoire des doctrines cosmologiques de Platon à Copernic*, V, pp. 345 ff.) But the use which he makes of the commentary is so different from Crombie's as to make the latter's a wholly new study of the material.

²⁰ Ludwig Baur: *Die philosophischen Werke des Robert Grosseteste. Beiträge zur Geschichte der Philosophie des Mittelalters*, IX (Münster, 1912).

²¹ It was printed in 1475, 1494, 1497, 1504 and 1537, indicating its widespread popularity.

²² See *A History of Magic and Experimental Science* (New York, 1923), Vol. II, Ch. 55.

and of the nature of lenses, and many of the optical ideas of Roger Bacon were taken from his master. The main Arabian source of Grosseteste was a Latin translation of the mathematical work of Alhazen. The great Bishop of Lincoln was an enthusiastic advocate of the study of Greek and Hebrew, and an important forerunner of the Revival of Learning.²³

Even this snatch is more than Dampier accords Grosseteste,²⁴ yet it would seem that a man who "determined the main direction of physical interests in the thirteenth century" deserves better.

VII

Grosseteste stood in a favored position for the generation of a new attitude toward inquiry into nature. Heir to the Platonic-Augustinian tradition in philosophy with its strongly mathematical tinge, he lived just at the time when Aristotle's science was entering into Latin Europe with the impact and excitement of novelty.²⁵ The "old logic" of Aristotle had a central place in the medieval curriculum, and the newly translated portions of the *Organon* were assured of close and attentive study by the best minds of Europe. Moreover, there was, in Crombie's opinion, a strong and growing stream of respect for the achievements of the empirical arts. "Active, practical interest of educated people," he says, "may be one reason why the Middle Ages was a period of technical innovation, though most of the advances were probably made by unlettered craftsmen."²⁶ Previous thinkers in the 12th century had exercised themselves over the classification of the arts and sciences, making the Aristotelian distinction between practical and theoretical sciences. To divide the former, as for instance Dominicus Gundissalinus (fl. c. 1140) did, into physics, mathematics, and metaphysics²⁷ puts before the contemplative mind clear sub-

²³ *Short History of Science to the Nineteenth Century*, p. 156.

²⁴ *History of Science and its Relations with Philosophy and Religion*, pp. 83-84.

²⁵ Grosseteste was born c. 1170, and died in 1253. The usual birth-date given is c. 1175, but Crombie states, without arguing the point, that it may have been as early as 1168.

²⁶ *Augustine*, pp. 143-44.

²⁷ *Robert Grosseteste*, pp. 36-37.

divisions. One can then confidently inquire concerning their state, interrelations, and progress. "What these practical writers of the twelfth century chiefly lacked, even when they habitually practised observation, was, in fact, not an empirical attitude but the ability to transcend the rule-of-thumb methods of the practical crafts and to construct a theoretical science offering rational explanations of the facts of experience."²⁸

Grosseteste was effectively the first to provide this theory. With the ongoing development of technology presenting a need, and the advent of Aristotle's scientific treatises the immediate stimulus and germ of method, modern science was created. "Grosseteste's contribution was to unite the two twelfth-century traditions of technology and logic. From the almost pure empiricism of such practical sciences of the twelfth century as practical mathematics, astronomy, and medicine, and the almost pure rationalism of the theoretical speculation in contemporary philosophy on scientific method, he produced a science in which he tried to show the principles according to which the world of experience could be experimentally investigated and rationally explained."²⁹ Physics became mathematical physics, in spirit if not yet wholly in form,³⁰ thanks to the Franciscan metaphysics of light which adapted itself so admirably to the development of geometrical optics at a time when geometry was still the firmest part of mathematics.

To the deductive side of science, Grosseteste added a theory of induction, based mainly on the Aristotelian account of the method of reaching definitions by division.³¹ The inductive process is the way of "resolution" and the deductive that of "composition," in Grosseteste's terminology.³² Resolution is the search for causes (*propter quid*) as well as essences (*quid est*). Both must be taken

²⁸ Ibid., p. 24.

²⁹ Ibid., p. 43.

³⁰ Constructive labors toward a mathematical physics came to a head in the 14th century, as in the work of Thomas Bradwardine, a later Oxfordian (d. 1349).

³¹ See *Post. An.*, ii, 13.

³² These terms and similar correlatives have a long history, extending down to Isaac Newton and beyond. See *Robert Grosseteste*, pp. 28-29, 311, 317-18.

into account, and complete exhibition of the *propter quid* involves all four Aristotelian causes. Search for the *quid est* led Grosseteste to equivalences such as this: "‘having horns’ is ‘not having teeth in the upper mandible in those animals to which Nature does not give other means of preservation in place of horn’." ³³ But the question regarding the *propter quid* of having horns led to a description of the presumable bodily changes occurring in time and bringing about the condition of the formal definition. In this case, the hard matter which would have gone to make teeth in the upper jaw was said to be diverted to the crown of the head to form horns.

The discovery of causes was not a mere matter of collecting facts and abstracting from them the common elements. Grosseteste says, in a passage worth quoting at length:

clearly the experimental universal is acquired by us, whose mind's eye is not purely spiritual, only through the help of the senses. For when the senses several times observe two singular occurrences, of which one is the cause of the other or is related to it in some other way, and they do not see the connection between them, as for example, when someone frequently notices that the eating of scammony happens to be accompanied by the discharge of red bile and does not see that it is the scammony that attracts and withdraws the red bile, then from constant observation of these two observable things he begins to form a third, unobservable thing, namely, that scammony is the cause that withdraws the red bile. And from this perception repeated again and again and stored in the memory, and from the sensory knowledge from which the perception is built up, the functioning of the reason begins. The functioning reason therefore begins to wonder and to consider whether things really are as the sensible recollection says, and these two lead the reason to the experiment, namely, that scammony should be administered after all other causes purging red bile have been isolated and excluded. But when he has administered scammony many times with the sure exclusion of all other things that withdraw red bile, then there is formed in the reason this universal, namely, that all scammony of its nature withdraws red bile, and this is the way in which it comes from sensation to a universal principle. ³⁴

³³ From the commentary on the *Posterior Analytics*. Quoted in Robert Grosseteste, p. 67.

³⁴ Compare this quotation in method with another one (curiously enough, the author was, like Grosseteste, a writer on geometrical optics): "In every physical science, we must ascend from facts to laws, by the way of induction and analysis; and must descend from laws to consequences,

Grosseteste preserved a Platonic sense of the uncertainty of such "universals," however, recognizing clearly that an effect may have several causes.³⁵

Most important, he made it plain that disconfirmation (or "falsification") was the necessary scientific complement to confirmation. A provisional theory could yield deductive consequences beyond its original sources, and therefore could be put to the test of negative instances. This part of his theory of science was based on Aristotle, as indeed most of it was, in this case the discussion in the *Posterior Analytics* of *reductio ad impossibile*.³⁶ But Aristotle considered this a distinctly inferior type of argumentation, and it is plain that Grosseteste was working a sea-change in the Greek theory of science.

After the abbreviated summarization of Grosseteste's contributions it remains to show that these writings could have actually been as significant in the entire history of science as Crombie feels they were. To this end he discusses at considerable length in *Robert Grosseteste*, as well as in *Augustine*, the later members of the Oxford school, notably Roger Bacon, showing the continuity of the central ideas. He asserts that Duns Scotus was the culmination of this particular moment;³⁷ after him Ockham began a major change by assailing his predecessors' belief that science revealed a real world behind appearances. The older viewpoint nevertheless persisted through the 17th century, and is plain to see in Galileo and Newton. One might speculate that this was in part because Grosseteste was more influential in European thought

by the deductive and synthetic way. We must gather and group appearances, until the scientific imagination discerns their hidden law, and unity arises from variety and then from unity must rededuce variety, and force the discovered law to utter its revelations of the future." From an essay titled: "On a general Method of expressing the paths of Light, and of the Planets, by the Coefficients of a Characteristic Function" (1833), by William Hamilton (identified by Whitehead as "not the Scotchman who was a bad metaphysician, but the Irishman who wrote good mathematics"). See *The Mathematical Papers of Sir William Rowan Hamilton*, I, *Geometrical Optics* (Cambridge, 1931), p. 314. Seven centuries have not diluted the strain of thought.

³⁵ See, for example, the quotation given in *Robert Grosseteste*, p. 81.

³⁶ *Post. An.*, i, 26.

³⁷ *Augustine*, p. 229.

than Ockham. Certainly, during the time when Grosseteste's direct influence was greatest in Oxford, there was active exchange of students and teachers with the universities on the continent. Crombie holds that Albertus Magnus, the seminal thinker of 13th century France and Germany, was strongly influenced by Grossetestian science.³⁸ Although he grants that "it would be forcing the evidence to suggest that the theory of experimental science which, from the thirteenth century, came to direct the scientific activity of the West, was the unique creation of Oxford,"³⁹ nevertheless "a theory of experimental science essentially the same as that developed by Oxford logic may be traced through the principal writings of later scientists down into the seventeenth century."⁴⁰ After tracing this line of descent in some detail,⁴¹ "we reach the conclusion," he says at last, "that despite the enormous increase in power that the new mathematics brought in the seventeenth century, the logical structure and problems of experimental science had remained basically the same since the beginning of its modern history some four centuries earlier."⁴²

Crombie's thesis is likely to prove highly controversial, especially for those who take an extreme view of the importance of experimentation in science.⁴³ But whatever the outcome may be, it is certain that the renewed study and evaluation of the period will produce a desirable alteration in present interpretation of the age and its thinkers.

VIII

It is interesting to contrast Crombie's study of Grosseteste with a recent book on Grosseteste's most famous disciple, Roger Bacon.⁴⁴ The title gives promise of a broad study of Bacon's

³⁸ *Robert Grosseteste*, p. 189.

³⁹ *Ibid.*

⁴⁰ *Ibid.*

⁴¹ *Robert Grosseteste*, Chs. VIII and XI; *Augustine*, Chs. V and VI.

⁴² *Robert Grosseteste*, p. 318.

⁴³ See my remarks on this subject in the preceding installment on this paper: this journal, VII, pp. 86-87.

⁴⁴ Stewart C. Easton: *Roger Bacon and his Search for a Universal Science: A Reconsideration of the Life and Work of Roger Bacon in the*

interpretation of the principles of science. But in his introduction, the author lays down the premiss that the proper technique of historical study must be to evaluate any thinker in the light of his contemporary intellectual context, and that "we must not expect, moreover, to find any individual thinker suddenly transcend the whole scheme of beliefs by which his contemporaries lived. If we find that in some particulars he appears to have transcended it we must make the assumption that we are liable to have misunderstood his contribution."⁴⁵ The crippling flaw in this method is obvious: granted that a man does not transcend the *whole* of his contemporary thought, there is no necessity for assuming that he has transcended no particulars of it. Change is transcendence in some sense. We must be cautious in attributing an excess of modernity to medieval thinkers, but nonetheless we must equally avoid blinding ourselves to the universal elements in their thought. At its worst, short-sighted historical interpretation declines into wholesale deprecation of other epochs for not being modern.

In this case the result is merely that Easton deals with Bacon on a narrowly biographical basis. Hence the greater part of the book is taken up with intricate reasonings, admittedly hypothetical in the main,⁴⁶ as to Bacon's life and relations with the universities, his Order, and the Popes. The study therefore becomes largely a genteel controversy with other Bacon scholars over biographical details and their interpretation. Easton contends that "Bacon's personal history is important for the understanding of his work,"⁴⁷ but the concrete contributions toward understanding which actually result from this approach are not very significant. Easton's technique is antithetical to Crombie's; the latter expends approximately one-half page on Grosseteste's life,⁴⁸ all trace of Grosseteste as a living personality being dissolved in the current of intellectual development which concerns Crombie.

Light of his own Stated Purposes (New York, Columbia University Press, 1952).

⁴⁵ *Ibid.*, p. 1.

⁴⁶ *Ibid.*, p. 4.

⁴⁷ *Ibid.*

⁴⁸ *Robert Grosseteste*, pp. 44-45.

Easton holds that Bacon received the impetus for his work from a pseudo-Aristotelian tract, well known in the Middle Ages, called the *Secret of Secrets*. This treatise purported to be addressed by Aristotle to Alexander, giving practical advice on the art of ruling; this included various magical means of employing the occult powers of herbs and stones as well as the recommendation to brush one's teeth.⁴⁹ Easton feels that Bacon's enthusiastic nature was permanently captured by the suggestion that power could accrue to those initiated in esoteric paths of knowledge, and that to him who possessed "integritas sapientiae" anything was possible. He compares Bacon's discovery of this book to those "epoch-making" moments "when Descartes spent his sleepless night from which came the vision of analytical geometry, when Rousseau heard that a prize was offered for a composition on the place of science in civilization . . . when St. Augustine heard the child's voice saying: 'Take and read.'" ⁵⁰ That such a revelation in fact occurred, however, is supported only by Bacon's frequent references to the *Secret of Secrets*.

Bacon's achievement of a "universal science" is supposed to be described in Chapter IX; this section is only eighteen pages long, and gives little satisfaction as an exposition of Bacon's contribution to science. The treatment of Bacon's experimentalism is insubstantial, and one finds such statements as this offered as elucidatory: "Ultimately the best experimental proof for the correctness of our mathematics is the verifiable fact that the George Washington Bridge has so far withstood the theoretically calculated strains put on it in practice."⁵¹ Easton at no point displays a very extensive or penetrating knowledge of science, and the effect of the whole is that of a routine piece of academic scholarship, on the whole cleverly and often plausibly argued from scanty and conjectural premisses.

These criticisms do not apply to Crombie's books. If a flaw is to be found in them, it is that his desire to establish the continuity of scientific thought leads him to neglect the less prophetic aspects

⁴⁹ See Lynn Thorndike's digest and discussion of this treatise, op. cit., Vol. II, esp. pp. 272-78.

⁵⁰ *Roger Bacon*, p. 86.

⁵¹ *Ibid.*, p. 175.

of men like Grosseteste. For a thoroughly rounded picture of Grosseteste, for example, one must supplement *Robert Grosseteste* with other sources.⁵² But it was not Crombie's purpose to deal exhaustively with all the facets of Grosseteste's philosophy;⁵³ read as a treatise in the historical development of scientific method *Robert Grosseteste* is wholly adequate. Both this book and *Augustine to Galileo* can therefore serve as textbooks in the history and method of science, and as stimuli for research which will go beyond them along the paths thus broken.

IX

Mechanics is an area of science affording an outstanding opportunity for rigorous display of developing ideas. Because of its definiteness and its obvious utility, mechanics has a well-defined history, easily traceable from the Greeks through the Middle Ages down to modern times. It is surprising that good general histories of mechanics are so few,⁵⁴ since the central concepts are relatively limited in number, and its susceptibility to mathematical treatment gives the study a truly classic simplicity and elegance. Furthermore, the increasing solidarity of mechanics with other parts of physics only emphasizes that its concepts have always had a central role in science.

To the handful of existing histories of the field there has been

⁵² For this purpose, as well as for consultation on medieval science in general, the especially rich bibliography in *Robert Grosseteste* is an invaluable aid.

⁵³ The chapter entitled "The Metaphysics of Light" is the shortest one in the book.

⁵⁴ Sarton's *Guide to the History of Science* lists three general accounts besides Dugas' which are of importance (there are numerous special studies of particular topics, such as perpetual motion): Pierre Duhem's *L'Evolution de la Mécanique* (Paris, 1903); Eugen Karl Dühring (the same Dühring that Engels pilloried in his *Anti-Dühring*): *Kritische Geschichte der allgemeinen Principien der Mechanik* (Berlin, 1873); Emile Jouguet: *Lectures de la Mécanique* (Paris, 1922). Ernst Mach's *The Science of Mechanics* (Leipzig, 1883; fifth ed. 1904) provides much historical material, but is not a systematic history of the science.

added a new one, *Histoire de la Mécanique*, by René Dugas.⁵⁵ A massive work,⁵⁶ it aims to provide in one volume a comprehensive survey of mechanics from its Greek origins, and it is unique for its concluding section of some 175 pages dealing with twentieth century mechanics, which is to say, relativity and quantum theory, wave mechanics and quantum mechanics. Needless to say, from ancient investigations of the principles of the lever to the relativistic unification of space and time is a far cry, and the various parts of the book are not of wholly equal worth. For the medieval period Dugas leans almost exclusively on Duhem's researches, ignoring completely more recent work of students of medieval science like Marshall Clagett and Anneliese Maier.⁵⁷

The remainder of the book (Books II-IV), is of great interest and worth, for philosophers as well as scientists. Without understanding clearly the kind of technical scientific problems which engaged the attention of a man like Leibniz it is impossible to evaluate much of his philosophical work. Nowhere more than in the 17th century is this intertwining of science and philosophy more complete. (Only the twentieth century begins to approach it, and it may surpass its predecessor before it has run its course.) Galileo, Descartes, Newton, and Leibniz are the dominating figures of this period, and all of them were deeply concerned with problems of mechanics. When one takes a sufficiently long view, as Dugas does, no one of them is emphasized to the detriment of the others. This is no mean accomplishment, since, as Alexandre Koyré has pointed out, "every historian . . . is a bit of a hagiographer."⁵⁸

The culmination of the next division, Book III, is the *Analytical Mechanics* of Lagrange,⁵⁹ the form of which epitomizes

⁵⁵ René Dugas: *Histoire de la Mécanique* (Neuchatel: Editions du Grifon, 1950). With a preface by Louis de Broglie.

⁵⁶ Almost 620 pages, exclusive of table of contents and index.

⁵⁷ For Clagett, see *Isis*, various dates. For a brief survey of Maier's work, with one exception, see *Isis*, XL, 120-21. The missing book, *Die Vorläufer Galileis im 14. Jahrhundert*, is reviewed in *Isis*, XLI, 207 ff. It is likely that her results will become indispensable to anyone studying medieval physics and mathematics.

⁵⁸ *Etudes Galiléennes* (Paris, 1939), Vol. II, p. 3.

⁵⁹ First edition, 1788.

the spirit of the Enlightenment. Dugas reproduces Lagrange's *Avertissement*, giving his aims:

To reduce the theory of mechanics and the art of solving the problems relating to it to general formulas, the simple development of which gives all the equations necessary for the solution of every problem. To unite and present under one point of view the different Principles hitherto discovered for facilitating the solution of questions of mechanics, to exhibit their mutual dependance and to render possible judgment of their accuracy (*justesse*) and their scope (*étendue*) No Figures whatsoever are to be found in this Work. The methods which I expound require neither constructions nor geometrical or mechanical reasonings, but only algebraic operations subjected to a regular and uniform progression. Those who love Analysis will behold with pleasure Mechanics becoming a new branch thereof, and will be grateful to me for having thus extended its domain.⁶⁰

Lagrange's system of mechanics formed the first great watershed. As Dugas says in beginning the next section: "After Lagrange, that is to say, after all the organizational efforts of the mechanicians of the 18th century, the phase of elaboration is reached in mechanics. It will endure until the demands of relativity and quantum physics appear to shake the classic edifice."⁶¹ After reviewing the immense constructive labors of the 17th and 18th centuries, and the phase of ramification and refinement of the 19th, Dugas appropriately concludes his fourth book with a summary of the late 19th century philosophic controversies among scientists over the interpretation of the Newtonian concepts of mass, force, time, and space. Kirchhoff, Mach, and Poincaré are some of the names which figured in these discussions.⁶²

The era of modern physics arose out of this unrest, bringing a more drastic reinterpretation of the Newtonian concepts than the disputants at the turn of the century might have supposed, the

⁶⁰ Quoted in Dugas, *Histoire*, p. 319.

⁶¹ *Ibid.*, p. 337.

⁶² This section sheds considerable light on the more elliptical parts of Poincaré's *Science and Hypothesis* (e.g. Ch. VI, and its references to the "School of the Thread"), which was, of course, written in a context of controversy and does not provide the kind of background information given in a history like Dugas'.

pivotal point being the Michelson-Morley experiment. Dugas recognizes the pitfalls of expounding developments which are so close us in time that in some cases they are in active process of reorganization. But he takes the stand that the Michelson-Morley experiment and the responses it provoked are now a half-century behind us, long enough to give sufficient perspective for a first attempt. "And if wave and quantum mechanics is still actually in the midst of technical development, the underlying axioms have already taken on a stable character."⁶³ If it be objected that these new forms of mechanics are merely physical theories cloaked in certain techniques and symbols of true mechanics, and therefore are too fragile to submit to historical study, Dugas remarks wryly that

we know, by the study of history itself, that classical science did not have at birth this codified appearance which its didactic veils give it today. It knew many hazards and upsets. Its axioms are neither self-evident nor logically necessary. It is experience (*expérience*), and experience alone which allowed classical science to detach itself from scholasticism. And what belongs to experience is always open to revision.⁶⁴

Modern mechanics divides initially into two diametrically opposed paths: the cosmological, to the theory of relativity; and the intra-atomic, to the quantum theory. Ultimately the hope is to reunite the two, not to canonize the separation, but this is sufficiently tentative so that even Dugas does not attempt to cover the work of unification which has been done.⁶⁵ Dugas covers relativity first, giving a brief account of both the special and general theories, carrying his exposition through Hermann Weyl's unsuccessful unified field theory (1918). He then summarizes the growth of quantum theory from the paper by Niels Bohr⁶⁶ in which Planck's quantum of action was first applied to atomic structure, marking the breakdown of the universality of classical

⁶³ Dugas, *Histoire*, p. 447.

⁶⁴ *Ibid.*, pp. 447-48.

⁶⁵ Einstein's recent proposal was, of course, made after the publication of this book, but even so Dugas does not take his exposition much beyond 1935.

⁶⁶ "On the Constitution of Atoms and Molecules" (1913).

mechanics as applied to matter, through the wave mechanics of Louis de Broglie and Erwin Schrödinger, and the quantum mechanics of Heisenberg and Dirac. The penultimate chapter covers technical ramifications of the basic principles which have been laid down, and the final chapter discusses briefly some fundamental questions of quantum mechanics, such as the principle of complementarity, probability and laws of nature, and the relation of quantum mechanics to reality. No attempt is made to treat these problems exhaustively.

The presentation of the subject throughout the book, and especially in the later chapters, makes considerable use of mathematics. As Dugas notes,⁶⁷ the progress of mechanics has gone hand in hand with increasing complexity of mathematical expression. This is inherent in the development which the concepts have undergone; Heisenberg arrived at the calculus of matrices, and Dirac and Heisenberg at Hilbert spaces, without realizing it, merely by following the demands of mechanics itself.⁶⁸ It is to be hoped that this factor will not keep the book from becoming better known to historians of philosophy and science.

While it contains many acute comments on the material, the book's main purpose is expository rather than interpretive. Hence it belongs to a different class from those like Crombie's two volumes and is equally useful for different purposes. But the spirit which guided its composition is shown in the modest "Remarks in the nature of a general conclusion" which close the book:

We have restricted ourselves particularly to principles, in which the essential problem of mechanics seems to reside, without being concerned with accumulating facts The epochs when science has limited itself to exhausting the consequences of predetermined premises are periods of latent unintelligibility. Failure to question the very foundations lulls one into a false security Nothing is futile in scientific matters, not even the contemplation of the past. For the latter conceals the lesson of our detours, of our doubts, of our illusions and our errors Direct knowledge of the old works, outmoded as they may be today, can but enrich the perspective of the future which opens before us.⁶⁹

⁶⁷ *Op. cit.*, pp. 623-24.

⁶⁸ *Ibid.*, p. 568.

⁶⁹ *Ibid.*, pp. 623-25.

X

The basis of the history of either philosophy or science is a mass of detailed studies of smaller portions of the whole: interpretations and evaluations of individual men's work and somewhat more generalized examinations of particular periods. In the case of science, this stage can take the form of close study of especially significant turning-points in the growth of scientific concepts, generally as marked by epochal books or papers. The series of "case histories" being written under J. B. Conant's editorship is an example.⁷⁰ Also, in the history of science a natural division comes between the established disciplines: physics, biology, chemistry, and so forth. This is approximated in philosophy by studies in the history of logic, ethics, esthetics, etc.,⁷¹ but because of the more obvious interdependence of the parts of philosophy their historiographers have earlier encountered the difficulties which historians of science are now running up against. The attempt to survey science or philosophy in general, giving a concise and accurate account of the outlines of many areas, is the most difficult sort of historiography to carry off successfully, because of the severe limitations necessary. Such a work can only succeed by so luminous a selection and use of the available material that the constrictions appear to the reader to fall away under the impact of understanding.

A synthesis does not flower spontaneously from a root and stem of lesser studies; each such study itself must be made under a provisional generalization. Therefore no synthesis can be considered final, and there will always be the need for fresh thought of this kind. But it is possible to produce works which are truly organic in character, centered around specifically scientific

⁷⁰ James Bryant Conant, ed., *Harvard Case Histories in Experimental Science*. (Cambridge, Mass., 1950, on.) Six studies have been published so far in this series, dealing with atmospheric pressure, the phlogiston and the caloric theories, the development of the concept of atoms, plant respiration, and fermentation.

⁷¹ Numerous examples of special studies in philosophical fields are compiled in Vol. I of Friedrich Ueberweg's *Grundriss der Geschichte der Philosophie* (12th ed., Berlin, 1926), edited by Karl Praechter, pp. 4*-7*.

developments, yet enlarging and illuminating them by reference to a cultural matrix. This can only be done by the infusion of the whole with concepts and evaluations which bring each part into a meaningful relation with every other part.⁷² The problem is that which Kant faced in the *Critique of Judgement*: the search for system requires that the seeker realize that he is working with what Kant called "reflective," as opposed to "constitutive" judgments. Systematization proceeds from a central idea, but the selection and application of this idea demands the utmost in sensitivity and balance.⁷³ The result must stimulate and encourage further work by which unconscious errors are corrected. Negative attitudes toward any phase of the history of thought will immediately cripple the endeavor. This is only too vividly illustrated by the pains which the continuing contemporary re-evaluation of the medieval period, both in regard to philosophy and in regard to science, is costing. We cannot afford a recurrence of this wholesale sterilization, nor any lesser repetition of it.

The main objectives of a history of science are these: to select and exhibit accurately the central characteristics of one or more events so as to evoke an enlightened sympathy for and understanding of the scientific mode of dealing with the world, and an unavoidable recognition of the unbroken continuity of scientific work with the whole of human activity, as well as its proper place therein. Overemphasis on one aspect—even that of experimental method—will result in needless and harmful differentiation and disruption of the body of human knowledge. That the demands are heavy is adequately attested by the scarcity of acceptable works in the field. That the challenge is worth the effort is attested by the whole character of the age in which we live.

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⁷² Two examples of ununified aggregations are *Background to Modern Science* (Cambridge, 1938), edited by Joseph Needham and Walter Pagel, and the series *Science in Progress* (New Haven, 1937, on) edited by G. A. Baitzell. This does not mean, of course, that such collections are not of value.

⁷³ Sarton thinks that serious misunderstanding of the history of science has come from historiographers who are medical men and see that as the center of science because of insufficient general knowledge. See *A History of Science*, I, p. xi.

ORGANISMIC CONCEPTS IN BIOLOGY AND PHYSICS

T. A. GOUDGE

PROFESSOR Bertalanffy's *Problems of Life* is a welcome English translation of his *Das Biologische Weltbild* which was first published in 1949.¹ The book contains a comprehensive discussion of the theoretical foundations of biology from the "organismic" point of view which the author has been advocating for a number of years. This point of view is presented as the only sound alternative to both mechanism and vitalism, whose limitations are effectively revealed in the opening chapters. Vitalism is found wanting because it involves a virtual surrendering of a scientific approach to biological phenomena. Mechanism is deemed unsatisfactory because it involves an inadequate "model" for the explanation of living things. The model is said to be made up of three leading ideas or conceptions. The first is the "analytical summative" conception, which regards the goal of biological inquiry as the analysis of organisms into elementary units, and the explaining of organic characteristics by the summation of these units. The second is the "machine-theoretical" conception, which considers the basis of vital order to lie in pre-established structures or "mechanisms" in the widest sense of the word. The third is the "reaction-theoretical" conception, according to which an organism is like an automaton, reacting only when subjected to stimuli and otherwise completely passive. Bertalanffy argues that these ideas cannot give us an adequate understanding of life. Perhaps the book's major achievement is to show how they distort or disregard important biological facts.

The model provided by the organismic point of view is quite different. Without having recourse to any transcendent vital force or immanent teleology, it nevertheless rejects the basic ideas of mechanism. More specifically, it replaces the analytical-sum-

¹ Ludwig von Bertalanffy, *Problems of Life* (New York, John Wiley and Sons, 1952).

mative conception by the idea of biological organisms as wholes or systems which have unique system-properties and obey irreducible system-laws. The machine-theoretical conception is replaced by a dynamic interpretation of living things, wherein organic structures are due to a continuous flow of processes combining to produce patterns of immense intricacy. The reaction-theoretical conception is jettisoned in favour of the view that the organism is primarily a center of activity which is autonomous and not a mere response to external stimuli. Finally, the organismic model considers that biological systems are stratified, so that, e.g., viruses, genes, chromosomes, cells, multicellular individuals, supra-individual aggregates, etc., form a hierarchy of "levels" exhibiting an increasing degree of complexity. The whole of nature, indeed, contains "a tremendous architecture, in which subordinate systems are united at successive levels into ever higher and larger systems."²

When this architecture is looked at from the standpoint of physics, important differences can be seen, according to Bertalanffy, between inorganic and organic systems. The former are "closed" whereas the latter are "open." Closed systems form part of the subject-matter of physical theory and have the following prominent features. (1) They exchange energy but not matter with their surroundings. (2) They tend always in the direction of, or are actually in, a state of true equilibrium. (3) They conform to the laws of classical thermodynamics. (4) Consequently, they exemplify an increase of entropy and a decrease of internal order. Open systems, on the other hand, (a) exchange matter as well as energy with their surroundings; (b) tend to maintain themselves at a constant distance from true equilibrium in a "steady state"; (c) do not conform to the laws of classical thermodynamics but to laws so far unformulated in a scientific way; (d) tend to minimal or negative entropy production, and hence on occasion show an increase of internal order, heterogeneity and complexity. One other point of contrast between the two types of system is crucial for the organismic conception. In an open system, the final steady state is not dependent on the initial con-

² *Problems of Life*, p. 23.

ditions, but only on the system conditions which control the ratio between the inflow and outflow of its component materials. Such a system therefore displays a "directiveness" or "equifinality" in its behaviour. It can reach the same end result from different beginnings and in different ways. Closed systems rarely, if ever, behave in this manner. A change in their initial conditions usually leads to a change in final result. On the basis of all this, Bertalanffy offers the following tentative definition: "A living organism is a hierarchical order of open systems which maintains itself in the exchange of components by virtue of its system conditions."³

To establish the soundness of the organismic conception in general and the above definition in particular, the author seeks to show how they illuminate such matters as embryonic development, genetic processes, growth, self-regulation, metabolism, evolution, etc. Whether the case he presents is a strong one must, of course, be ultimately decided by the experts in biology. But from a philosophical standpoint much of the discussion seems impressive, especially when it is directed towards problems of ontogenetic organization and functioning. Thus, the author argues persuasively that an understanding of embryonic development no longer requires the taking of sides in the old contest between preformationism and epigenesis. To account for the appearance of a fully-formed individual out of the undifferentiated mass of a fertilized ovum, we do not need to postulate any pre-established *anlagen*, Aristotelian potencies, or *nisus formativus*. We can proceed on the hypothesis that the developing embryo is a total system whose growth is determined by internal system conditions, i.e., by "a specific *Gestalt* principle immanent in the organism."⁴

The ostensible teleology manifested by this process is simply an illustration of the equifinality which characterizes the behaviour of open systems. Bertalanffy does not imply for a moment that this approach is a substitute for detailed empirical investigation in embryology, or that it solves all the major problems in the

³ Ibid., p. 129.

⁴ Ibid., p. 65.

field. He expressly states that a fully satisfactory theory of development does not exist at present. But he gives weighty reasons for thinking that when such a theory is formulated it will contain organismic concepts.

There is another part of the author's discussion, however, which is not so convincing. He makes clear the fact that biological systems are profoundly historical entities. Every organism is derived from others of the same kind, and bears within itself traits from its own past as well as from the history of the generations which preceded it. Yet in his definition of a living organism he deliberately omits any reference to these historical features on the ground that they are something "about which we can say little in an exact way."⁵ The omission leads one to ask whether there is a deficiency in the organismic conception at this point. A similar question seems to be raised by the author's treatment of evolution.

It is usual to distinguish two main aspects of this topic: (a) the descriptive or historical aspect, and (b) the explanatory or causal aspect. Bertalanffy says little about (a), but devotes his attention to (b), with special reference to the powerful interpretation which combines the findings of genetics and the tenets of Darwinian natural selection. The interpretation purports to give a causal account of the origin of (i) subspecies, species and genera, (ii) higher systematic units such as classes and phyla, (iii) ecological adaptations to definite environments, and (iv) complex morphological and physiological integration within the organism. The author holds that the interpretation does adequately explain (i) and (iii), the so-called "micro-evolutionary" process. But he thinks that if (ii) and (iv) are to be adequately explained, something more than the factors admitted by modern selection-theory is required. Macro-evolution seems to point to the working of a primordial creativity which expresses itself in the production of the vast multiplicity of organic forms. Moreover, selection-theory implies that the whole course of evolution is a "series of accidents" and hence fortuitous. Such an implication, the author contends, must be unacceptable to

⁵ Ibid., p. 109.

scientific biology, which is bound to seek for definite laws governing the evolutionary process. Finally, Darwinian selection-theory incorporates a number of ideas drawn from English political and economic thought in the nineteenth century, e.g., competition, usefulness, progress, etc. But are these ideas adequate for the understanding of two billion years of the earth's history? The author tends to reply in the negative.

The above critical comments, especially when considered in detail, are certainly of interest. Yet even if one admits their validity, it is by no means clear what contribution the organismic conception has to make to the issues raised. Perhaps the author does not intend that it should so contribute, though he says: "while fully appreciating modern selection theory, nevertheless we arrive at an essentially different view of evolution."⁶ One wonders, however, about the relevance of the organismic conception to evolution on its historical side. Since the conception is advanced primarily as a basis for "exact" biology which aims at the formulation of precise quantitative laws, what application can it have to the case where there is just a *single* complex process? Within the evolutionary process, laws may well be operative in so far as there are recurrent series of events. But is the process in its entirety amenable to anything more than historical description, or, possibly, to "explanation" in terms of non-quantitative principles? The author himself seems to be hinting at something like this when he remarks:

So, evolution appears to be more than the mere product of chance governed by profit. It seems a cornucopia of *évolution créatrice*, a drama full of suspense, of dynamics and tragic complications. Life spirals laboriously upwards to higher and ever higher levels, paying for every step . . . The meaning of this play is unknown, unless it is what the mystics have called God's attaining to awareness of Himself.⁷

A number of further topics, such as the definition of an organic whole, the relation between biology and physics, the unity of science, and the discipline which Bertalanffy has called

⁶ Ibid., pp. 104-105.

⁷ Ibid., pp. 108-109.

"general system theory," are taken up in the later chapters of the book. Much that is said on these topics is worthy of comment, but they must be passed over. One closes the book with a keen sense of the attractiveness which organismic concepts have for most people who reflect on the philosophical basis of biology. Just because these concepts *are* so attractive, they must be made to meet the severest demands of logic and empirical fact whenever they are used. Bertalanffy's acute, wide-ranging discussion is a good example of the kind of treatment they require.

Although Professor Schrödinger's *Science and Humanism* is a rather desultory consideration of a number of themes in contemporary physics, its pages are sprinkled with stimulating ideas, only a few of which can be noted here.^{*} I shall merely select certain of the ideas which seem to have a striking similarity to those advanced by Bertalanffy in expounding his organismic conception of life.

Near the beginning of his book, Schrödinger raises the question of how we can best picture the domain of matter in the light of the discoveries due to quantum theory. Up to the beginning of the present century, matter was thought to be composed of certain ultimate particles which maintained their identity through long stretches of time just like the coarse, palpable objects of our everyday environment. Each particle was an individual entity whose individuality was based on the identity of the material in it. The physical discoveries of the last few decades compel us, according to Schrödinger, to reject this picture. We must "dismiss the idea that . . . a particle is an individual entity which in principle retains its 'sameness' for ever. Quite the contrary, we are now obliged to assert that the ultimate constituents of matter have no 'sameness' at all."[°] Accordingly, if at a certain instant a particle is observed at a certain point, this is to be considered in principle as an isolated event. Even if at the next instant we observe a similar particle at an adjacent point, and even if there is every reason to assume a causal connection

^{*} Erwin Schrödinger, *Science and Humanism* (Cambridge, Eng. Cambridge University Press, 1952).

[°] *Science and Humanism*, p. 17.

between the first observation and the second, "there is no true, unambiguous meaning in the assertion that it is *the same* particle we have observed in the two cases."¹⁰ We can no longer believe with Newton in "solid, hard, massy, impenetrable particles" which are eternally the same.

Is there, then, no element of permanence in these ultimate constituents of matter? The answer, Schrödinger suggests, is that their permanence consists wholly in their form or shape. But this is not the shape of some material substance. To think so is to perpetuate the old Aristotelian "matter and form" distinction which simply does not apply to the domain of microphysical entities. The ultimate constituents of matter are therefore "as it were, *pure shape*, nothing but shape; what turns up again and again in successive observations is this shape, not an individual speck of material."¹¹ In speaking thus, we should, of course, understand "shape" or *Gestalt* in a much wider sense than as geometrical shape. Particles are not tiny spheres, cubes, pyramids, etc. The fact is that what we require here is not a *visual* model at all. It is a conceptual model. And as in the case of cosmology, there is no question of the model being compared directly with "actual facts." Consequently, it is better to say that the model is *adequate*, rather than *true*.

A great deal of the difficulty we encounter in trying to understand microphysical processes, Schrödinger contends, arises from an assumption we make that these processes must be susceptible to exact, continuous description. This assumption seems to work at the molar level, and we unconsciously regard it as applicable universally. But if we take the term "continuous" in a strict mathematical sense, it is doubtful whether the assumption really applies anywhere.

The idea of a *continuous range*, so familiar to mathematicians in our days, is something quite exorbitant, an enormous extrapolation of what is really accessible to us. The idea that you should *really* indicate the exact values of any physical quantity . . . for *all* the points of a continuous range, say between zero and 1, is a bold extrapolation. We

¹⁰ Ibid., p. 17.

¹¹ Ibid., p. 21.

never do anything else than determine the quantity approximately for a very limited number of points and then 'draw a smooth curve through them.' This serves us well for many practical purposes, but . . . from the point of view of the theory of knowledge it is totally different from a supposed exact continual description.¹²

We are no doubt entitled to affirm that physical dependences do approximate to functions of a mathematical kind for which continuous descriptions can be indicated. "But to assume that physical dependence is of this simple type, is a bold epistemological step, and probably an inadmissible step."¹³ If so, why should we feel uncomfortable when evidence points to the presence of discontinuity in nature??

Schrödinger's discussion lends support to Bertalanffy's contention that the idea of *Gestalten* is a fruitful one not only for biology but for other branches of science as well. The parallel between the model of a biological system as a *Gestalt* due to the dynamic interplay of processes, and the model of a physical particle as likewise a *Gestalt* of a dynamic sort, is certainly remarkable. Equally remarkable is the "elusiveness of the mere individual" in the two domains. If a particle should no longer be considered an individual entity, neither, it appears, should an organism. "Strictly speaking, there is no biological individuality, but only a progressive individualization, both phylogenetic and ontogenetic . . . Individuality is a limit which is approached but not reached either in development or in evolution."¹⁴ Both Bertalanffy and Schrödinger are prepared to countenance an element of discontinuity in their respective domains. For the former, the discontinuity is seen primarily in the existence of the different levels which make up the architecture of organic nature. For the latter, the discontinuity is required both by the observational evidence and by the "intricacy of the continuum," taken in the strict mathematical sense. Philosophers who keep abreast of current scientific trends will not wish to ignore these contentions.

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¹² Ibid., pp. 30-31.

¹³ Ibid., p. 33.

¹⁴ Ibid. p. 49.

DISCUSSIONS

DEMOS ON "NATURE, MIND, AND DEATH"

C. J. DUCASSE

At the end of his critical study of my *Nature, Mind, and Death*, in the June 1953 issue of this Review, Mr. Demos states that his "objections and criticisms should be regarded rather as questions put to the author." In what follows, the author attempts to answer them.

1. Concerning the meaning of reality, Mr. Demos asserts that, according to me, "what we call real is wholly relative to our purposes" (p. 565) and then points out that this is not what "real" means when we ask about a story whether what it relates really happened.

I agree. But Mr. Demos ignores the fact that in Secs. 3 to 8 of my Ch. 6, five different meanings of "real" (or its cognates, "really," "reality"), each relevant to a different sort of context, are illustrated. They are defined substantially as follows:

(1) "That A is really of kind K" = "That, *notwithstanding doubts to the contrary*, it is true that A is of kind K."

(2) "That something of description D really exists" = "That, *notwithstanding doubts to the contrary*, it is true that something of description D exists."

(3) "That X is real" = "That X *exists*."

(4) "That description D, of something A, states what A really is" = "That description D of A is the description *relevant to the purposes connected with A that govern at the time*."

(5) "That to be real is asserted (or assumed) to consist in having character C" = "That character C is *taken* by the person who so asserts (or assumes) *as being of exclusive or of supreme importance or interest*."

Now, what Mr. Demos does in the passage referred to above is to pick, arbitrarily, the *fourth* of these meanings as if it were the only one I admit, and then to point out that it does not fit his example. Obviously, however, the meaning of "real" which fits

the example is the *second* of those I define—which meaning, moreover, I myself illustrate (*N.M.D.* pp. 69-70) by pointing out that to ask whether the Hamlet of the Shakespeare story really existed is to ask whether, notwithstanding doubts to the contrary, it is true that a man of that description existed.

The objections in the remainder of Mr. Demos' remarks concerning what I say about the meaning of "reality" similarly take into account only the fourth or the fifth of the above five meanings, and in addition seem to take these two as if they were one and the same.

2. On the subject of Causality, Mr. Demos and I apparently are agreed as to a number of points: (a) that regularity of sequence neither constitutes nor guarantees causal connection; (b) that some sequences are causal and others accidental; (c) that, basically, causal connection is, as he puts it, "a singular relation between singular events"; and (d) that causality is etiological necessity, which is a relation different from logical necessity; so that, as Hume emphasized, a cause never logically entails its effect.

But Mr. Demos asserts that I "glide" from (c) to (d) "as though the two were equivalent or as though the first entailed the second," whereas "there is no equivalence and no entailment"; and that I so "glide" because I fail "to engage in any conscious analysis" of what I call "etiological necessity" (p. 569).

The facts, however, actually are (1) that I fully agree that no logical passage from (c) to (d) is possible; (2) that I do not regard or put forth (d) as an inference from (c); and (3) that I *do* offer an analysis—an *empirical*, not a logical analysis—of etiological necessity when I assert that the statement, "The change A in state of affairs S was the only change in S antecedent to the change B in S," formulates *the very meaning and the only meaning* of the statement, "The change A in S caused, i.e., etiological necessity, the change B in S"; or in other words, that a given sequence's being *of the particular triadic form* which the first of the two statements above describes *constitutes* its being not an accidental sequence but a causal sequence, i.e., a sequence in which the antecedent event "etiological necessity" the sequent event.

Mr. Demos, however, objects that to speak of an event A as having necessitated another event B does not mean merely that

there was a sequence of B upon A, nor, even as I contend, a sequence of that triadic form; but means in addition and essentially that, given A, the sequent "*could not be*" other than B.

But I ask, of what kind is the impossibility which the words "could not be" refer to? Etiological or logical? Hume pointed out that no contradiction is involved in imagining the sequent to have been other than B; hence, that it *could* have been other than B, i.e., that its being other than B was possible; and I agree—*logically* possible. Thus, although Mr. Demos himself points out (p. 569) that *etiological* necessity is what I consider, his criticism—that I have not shown that, given A, the sequent *could not be* other than B—turns out, unawares, to be only the charge that I have failed to show that, in the triadic situation in view, A *logically* necessitates B! I have, of course, neither shown it nor attempted to show it, since I hold as firmly as Hume does that the relation between a cause and its effects is *not* that of logical necessitation.

Mr. Demos might reply that the impossibility to which his expression, "could not be," referred (and the corresponding kind of necessity) were not logical but etiological—but then, of course, in a sense of this term which would be different from the one I have submitted, but which he does not define; for the expression, "causal nexus," which on the next page he uses to designate something which he intimates one "apprehends" by "a combined act of reason and sense," is of course no definition but the very *definiendum*.

Moreover, if he did not mean *logical* impossibility and necessity, then it is hard to see what reasoning—which deals with logical relations—can have to do with the "apprehending" of causation. It is *experiment*, I submit, not an "act of reason" about our sensations, which ultimately reveals what *makes occur* what. That the blow of the axe *made*, i.e., caused, the head of Charles I to come off was *observed*, not inferred, by the spectators, if their observation that the blow was the only immediately antecedent change immediately adjacent to the king's neck was accurate; for then, since no other change occurred then and there, no other *could* have been what caused the head to come off.

3. As regards the absurdity that the song of a nearby canary

when a brick strikes a window is "involved as a cause in the breaking of the window"—which Mr. Demos alleges is maintained by me—all that needs to be said is that no such contention is to be found on the relevant pages of my book (pp. 123-24); but only that the song of the canary also has *some* effects, and that these are part of the *total concrete* sequent event, of which breakage of the window was *another* part.

4. Mr. Demos next criticizes the proof I offer of the uniformity of causation. Instead of his "simplification" of it, which is what he considers, I would submit that, at its simplest, my proof is this: the nature of any particular kind of substance, e.g., clay, is definable wholly in terms of how, in circumstances of diverse kinds, it behaves upon the occurrence of diverse kinds of changes in those circumstances. Hence, if a substance does not behave in the same manner when the same change in the same circumstances recurs, then that substance is *eo ipso* to this extent a different kind of substance: bricks and unbaked clay, for instance, behave differently, and hence, are substances of somewhat different kinds.

Incidentally, when Mr. Demos says that I maintain that "anything may cause anything" (p. 571), he omits the qualification upon which I would insist, namely, "so far as we can tell independently of experience"; for, like Hume, I hold that the effect of an event cannot be logically deduced from the nature of that event; and that, ultimately, only experience tells us what in particular can cause what.

5. In further criticism, Mr. Demos states that he finds incredible "the assertion that the tic-toc of a clock (simply as a measure of the passage of time) is itself responsible for events like thunder or the birth of a baby" (p. 571). I too, on the basis of my stock of meteorological and biological information, find it incredible. But, as he states, these are his own examples. No parallel assertion will be found in my book; but only that *if* the tic-toc were the only change in the state of the universe that had preceded a given event E, then *ex hypothesi* we could have no earlier information as to what can or cannot cause E; that in this case, no matter what E was, we would judge that the tic-toc had caused it, and that, since no other change had preceded

E, the tic-toc *would be* what had caused E (N.M.D. Ch. 9, Sec. 1).

6. On the subject of freedom and responsibility, I agree with Mr. Demos that "the assertion of responsibility involves . . . (a) I did it; (b) I could have done otherwise" (p. 572), and, I would only add, "had I willed to do otherwise." That is, I am free and responsible for what I do when volition by me to do an act is what causes the act; on the other hand, when volition by me to do an act does not cause it to occur, then I am not free to do it and not morally responsible for its non-occurrence. That, at times, I certainly have this freedom with regard to certain acts does not, however, in the least presuppose that my volition, which causes the act, was undetermined by motives. Freedom is not volition haphazard.

7. As against my contention that punishment is morally warranted *only* for purposes of benefitting society—by reforming the culprit, or by depriving him of opportunities to do evil, or by deterring others from imitating his evil deeds—Mr. Demos maintains that "a man is punished . . . for the evil things he has done, *because he deserves it*. This is what justice means" (p. 573).

Let us, however, suppose that science has discovered a marvellous drug, a shot of which is sufficient to turn the most infamous criminal into a saint and eager philanthropist, and that an atrocious criminal has been given that transforming shot. Even then, according to Professor Demos' doctrine, "justice" would demand that the severest punishment be inflicted upon him; that, for instance, he be jailed (at heavy public expense) for many years, instead of being permitted to devote all his time, strength, and thought, as *ex hypothesi* he is now eager to do, to the good of mankind.

I submit that this savage doctrine is nothing but instinctive animal anger, turned into vindictiveness by the longer range of human memory and purpose, and travelling under the eulogistic alias, Justice. For if that doctrine *is* justice, then what *moral* justification is there for justice? To the extent that the evil man has repented, has become good, and has repaired as much as he can the damage he has caused—thereby setting a good example to others—to that very extent *mercy to him* is what true justice

demands. Deliberately to cause *useless* suffering to any sentient being is stark malice, which is the depth of immorality. Infliction of suffering is morally justified only when it is the sole or the most effective available means to greater good.

8. Turning to the discussion of Substance in my book, Mr. Demos objects that "a substance is required as something which *has* properties and so as being not reducible to them" (p. 574). He points out that even I write that "substances have properties" (N.M.D. p. 164), though he suggests that I may have been speaking loosely. But on p. 168 I stated the sense in which that statement of mine was meant and is true; namely, that any particular kind of substance *has* properties in the same sense as that in which a year *has* days, a choice *has* alternatives, a list *has* items, or a whole *has* parts.

Mr. Demos' criticisms of my contentions regarding Substance all turn upon his ignoring two things which, because essential, I was careful to stress. First, that it is one thing to ask what set of properties defines the *nature* of a particular *kind* of substance (e.g., wax, or phlogiston, etc.); and quite another thing to ask whether there *exists* any *case* of the kind of substance those properties define. The question "What is Substance?" does not distinguish between those two, is therefore ambiguous, and as such is therefore unanswerable. But each of the two is separately answerable, whether about a particular kind of substance or about Substance in general.

The second thing Mr. Demos' criticisms ignore is that I pointed out there are two stages in a person's acquisition of knowledge of the nature of physical substances. At first, all he knows of the nature of any particular such substance is what experiences (e.g., pain, visual, auditory, and other sensations) it has the capacity to cause in him and how he can act upon it. For such capacities to act upon him, no existential substrate is needed other than some particular region of space-time; and this too is the only target his own actions upon it need. Presumably, animals and very young children have no other knowledge than that just described of the nature of the substances in their environment.

The second stage of a person's knowledge of their nature is

reached when he observes what two substances, whose nature is known to him as yet *only* in terms of such capacities as mentioned above, can do to and be done to by *one another*. Then, and only then, he discovers such capacities of them as fusibility, combustibility, etc., which are *not* predicable of regions of space-time simply, but only of *substances*, as known in the first way, occupying such regions. From then on, that person can employ certain existing substances as *tools* through which to cause in certain others various effects he cannot himself cause directly.

All this, which provides the "further clarification" Mr. Demos calls for (p. 574), may be found in Secs. 12 and 13 of Ch. 15 of *N.M.D.*; but his criticisms ignore it altogether.

9. Concerning Mr. Demos' critical remarks in his section entitled *Sense Data*, I can say only two things without taking up too much space. The first is that, when I say that the causes of sensations are *physical* events, I am not *describing* the nature of those causes, but only stating (a) that sensations have causes, (b) that these causes are events, and (c) that these events are commonly *named* "physical," even if Berkeley named them "divine volitions" or Descartes "hidden mental powers." I do not class myself as a metaphysical idealist, but assert only that, if we had no sensations, then patently we would have no knowledge or even conception of the world we now call "physical"; hence that such *conception* of its *nature* as we have is, in ultimate analysis, framed wholly in terms of its relation, however sometimes recondite, to our sensations; and that such *knowledge* as we have that a "physical" world *exists* is based on our knowledge (or postulate) that sensations *have* causes and on our belief that we do not ourselves cause them directly.

10. My second comment concerns the criticisms Mr. Demos introduces by referring to the problem of the speckled hen. They apparently do not, whereas I do, differentiate between judgments, statements, and propositions: *Judgments* can be erroneous, and the manner in which they are *stated* can be linguistically *incorrect*. Hence both are corrigible. But *propositions* cannot be erroneous or the opposite, but only true or false; for *error* is *belief* of a false proposition or *disbelief* of a true proposition.

As regards Mr. Demos' statement that the empirically given

"cannot serve as evidence until it is clothed in a sentence" (p. 577), I can only testify that the empirically given pain which I have felt on certain occasions did not in the least need to be clothed in a sentence in order to serve as evidence to me that one of my teeth needed the dentist's care.

In his epistemological reflections concerning his dog, Mr. Demos employs the words "intuitions" and "sense datum" in senses apparently so radically different from those I attach to them that his remarks at that point have no relevance that I can discern to anything I contend.

11. In connection with some of the statements in the last part of *N.M.D.* concerning the possibility or factuality of the human personality's survival after death, Mr. Demos raises chiefly two questions. One is why I attach more weight to the trance utterances of such a medium as Mrs. Piper than I do to the visions and revelations of the mystics. The answer is that some of Mrs. Piper's trance statements were of intimate details concerning the life on earth of a person who had died, which she could not have learned by normal means; which details, if verified, would constitute strong empirical evidence, though not conclusive proof, of the identity of the purportedly communicating discarnate person; and that many of those details were eventually verified. If the revelations of mystics were of similar kinds and likewise verifiable, and had been similarly verified, I would attach similar weight to them as evidence of the human personality's survival. Usually, however, what the mystics say about the insights they have gained in the mystic trance does not constitute evidence of such survival, is not verifiable by others, and reflects only the particular set of theological beliefs they had acquired prior to the trance. The chapter on Mysticism in a more recent book of mine¹ shows, I hope, that I do not ignore the mystics or deny the supreme value the mystical states have for those who experience them.

12. The other contention of mine which Mr. Demos there criticizes is that the question as to whether survival is a fact is logically quite independent of the question whether a God exists,

¹ *A Philosophical Scrutiny of Religion* (New York, 1953).

or more particularly, of whether a God of the specific kind conceived by the theologians of orthodox monotheism exists. The statement of mine to which Mr. Demos refers—that belief in that kind of God is born of a longing for the remembered comfort of a young child's relationship with his father—was only a suggestion I advanced as to why many persons embrace *that* conception of a God notwithstanding the insuperable difficulty the fact of evil constitutes for it, in preference to the polytheistic conception, with which on the contrary the existence of evil is not inconsistent. That psychological conjecture of mine may be mistaken, but this would not invalidate or tend to invalidate my assertion that the question whether survival is a fact or not is logically independent of the question as to the existence of a God—the latter question too being discussed at length in my more recent book mentioned above.

Mr. Demos further says that "the theist holds that the nature of the universe is 'really' moral." Yes indeed; but so does the non-theistic Buddhist. Hence, this question too is independent of that of the existence of the God of monotheism. Mr. Demos' remarks at this point, however, like those to which I replied at the outset, ignore the fact that "real," "really," "reality" are used commonly, and likewise by me, in at least five different senses, each relevant to a different sort of context; and the sense he imputes to me in the context of the question as to whether the universe is "really" moral is not the sense relevant to *that* question and is not that in which I would there use the word "really." The relevant sense is that in which "really" means "truly, notwithstanding doubts to the contrary."

I hope that the foregoing comments of mine adequately answer the chief of the questions Mr. Demos' objections raised. In closing, I wish to express to him my appreciation of the high compliments to me—I fear, hardly deserved—contained in the third paragraph of his article, and also to confirm his surmise that my cat, Siamese and now twenty years old, is a very special sort of cat—though my "exciting intellectual adventures" do not ordinarily have somatic repercussions that might disturb his coiled slumbers on my lap!

Brown University.

THE PAST :
SOME RECENT DISCUSSIONS

PAUL WEISS

THE PAST: ITS NATURE AND REALITY¹ has been made the subject of some very acute discussion. Most of what I there urged has been allowed to remain unchallenged, but certain parts have been strongly and effectively questioned. As a consequence I have been beset with doubts, and have found it necessary to widen my perspective.

There have been four outstanding critics. I will discuss their views in the order in which they appeared.

A. Mr. John E. Smith² makes at least ten points:

1. He thinks (p. 287) that I contradict myself when I say both that the past is "ineffective" and that it has "many effects." The words "ineffective" and "effects" certainly suggest a contradiction; this suggestion, however, can be removed by speaking of the consequences rather than of the effects of the past.

2. He calls attention to memory, imagination, and the growth of organisms as phenomena where the past seems not to be "left behind but in a sense present." He suggests that the past might be thought of as re-presented in the present, that the past be there as an effective trace (p. 288). But is it true in any of these cases that the past is in the present? Does the past exist in present memory, or is it not rather the case that memory refers to a past forever outside and beyond it? Do organisms contain the past, or is it not rather the case that they merely exhibit the *consequences* of a past career? I see nothing in these phenomena which requires us to deny that the past is completely left behind by all of them.

3. Mr. Smith next remarks that if the past does not change, it would be necessary (in order to account for the changing nature

¹ This journal, V (1952), pp. 507-22.

² In "Existence, The Past and God," this journal, VI (1952), pp. 287-95.

of our knowledge of the past) to separate that knowledge from the past of which it is the knowledge. Then "all we can say of the past is that 'it is' and that 'it' does not change" (p. 288). I think that this conclusion need not be drawn. Knowledge is always "knowledge of"; to know is to refer what we have in mind to a reality outside. When we know we articulate, reorganize, re-present, judge; we do not disturb what is external to us. This which is external may be past or present, something encountered or something inferred; it may be immanent or transcendent. In no case need it be merely pointed at.

4. Mr. Smith asks (pp. 288-89) how a view which insists on the unalterability of the past can allow for "forgiveness" or "atonement." If these require that the past be undone I am unable to see how they are possible. But they need not be so understood. It is more in consonance with experience and with many theological views to maintain that forgiveness and atonement relate to the abrogation of consequences which would otherwise follow on one's bad acts.

5. Mr. Smith says (p. 290) that I have, in my critique, paid attention to only one interpretation of the nature of God. He remarks that one might need God as a supplement to, rather than as a substitute for a naturalistic explanation. I think he is completely right on both counts, and I propose to keep them in mind hereafter.

6. Mr. Smith rightly distinguishes between the "why" of reasons and the "why" of causes (p. 292), and thinks that I deal with the latter but ignore the former. He seems to hold that the former requires a reference to God. But here I would apply completely and whole-heartedly the lesson I learned from him. There is a naturalistic as well as a transcendent "why" of reasons. The recognition of a "why" of reasons does not necessarily, therefore, require a reference to God. The need to complete the account of the world, to do justice to every dimension of reality is what requires this reference. The answers that God provides, supplement; they do not replace those obtained without reference to Him.

7. Mr. Smith says (p. 293) that all philosophic explanations must acknowledge at least one irrationality or surd, and suggests that my irrationality is the acceptance of a single past. I do not

follow him. What need is there to accept any irrationality? What is irrational in the view that the present universe implicates a single future which in turn supports a single past?

8. Mr. Smith thinks (p. 293) that "existence" is understood by me "as virtually equivalent to what has usually been meant by the term 'God.'" This is only partly true. God and existence are distinct, for existence is divisive and temporal whereas God is self-identical and eternal. Nevertheless there is a sense in which the two are one. God, as it were, divinizes existence; existence pluralizes God. Each subjugates the other to itself.

9. I was ignorant of the fact that Augustine thought that past evil deeds "are retained in the divine memory as that from which the individual needs to be redeemed" (p. 294). This is surely a significant addition to the view I offered. The past, I am now as a consequence inclined to hold, is preserved both by the future and by God, but in quite different senses.

10. Mr. Smith asks (p. 295) how the changeless past can be supported by a non-existent future. But the future is not non-existent; it has being of its own, making predictions both possible and significant.

B. Mr. Leahy³ offers the best pragmatic account of the three dimensions of time that I have ever seen. At one point (p. 378) he says that the pragmatic view differs from the realistic only in emphasis. This is more than an irenic remark; it is a judgment, shrewd and perceptive. Unfortunately he does not seem to keep it steadily in mind. On p. 380 he affirms, "There is no one present, no one past, no one future. There are only presents, focussed in specific problems, each with its own problematic past." Since he distinguishes the problematic past from the actual past as the changing known from the irrevocable reality which once existed, this apparent rejection of the reality of the actual past requires that he, contrary to his intent, oppose rather than complete the view I presented.

We ought to make room for the pragmatic thesis formulated by Mead and clarified by Leahy, in order to account for the vital

³ "A Pragmatic Theory of Past, Present and Future," this journal, VI (1953), pp. 369-80.

interest we have in knowing the past. It tells us why and how we construct a past. It does not, however, deal with the actual past (which the pragmatist like all the rest of us now only partially knows), and does not therefore provide a completely adequate account of the past.

C. Mr. Nathan Rotenstreich⁴ offers a profound and original theory to the effect that past and future organically interplay. As yet I have not fully grasped the implications of this alternative. But so far as I understand it, it is evidently a theory no adequate view can wholly reject. Some of his statements, though, seem to me to be unwarranted, and must be considerably modified. His main contentions can perhaps be summarized in seven points:

1. According to Mr. Rotenstreich, "a meaning of a past event cannot be considered exterior to it" (p. 599). This is undoubtedly true of the meaning which is ingredient in the past event. But Mr. Rotenstreich apparently is referring, not to that meaning, but to the meaning men attach to the past. If so, I do not agree. The settledness of the past does not of course preclude new references, new formulations, new re-presentations of it; but it does preclude our entering into that past through the agency of meaning, or in any other way.

2. He suggests that "the past is the potentiality of the present" (p. 600). If this implies that the present fulfills or perfects the past, it goes far beyond what the evidence seems to warrant. The present issues from the past, but may pervert as well as perfect it. The past is dead and gone, and this whether it be a tissue of potentialities or actualities. Surely, whatever potentialities are actualized are here and now in the present.

3. He offers the analogy: "past is to present like pregnancy to a child which arrived at the end of the pregnancy. The child is independent of the pregnancy once it arrives at open air. Yet pregnancy is pointed to in this stage of independence" (p. 600). It is of course true that reasons for and causes of the child are in the past. Like every other present being, it has features not explicable except through the supposition that there had been

⁴ "The Impact of the Past," this journal, VI (1953), pp. 597-603.

certain adventures in the past. To explain it we refer back to the past, but we do not thereby open the past to new influences, change it in any way.

4. Mr. Rotenstreich goes on to remark (p. 601) that "if 'altered' means 'unmake' it is certainly correct that a past fact cannot be altered. But if 'altered' means *enhanced* . . . every future occurrence alters the past." If what I hope are only verbal or minor changes were to be made in his statements, an important thesis emerges, which must be included in any satisfactory account. Instead of speaking as if the future altered the past, let us say that the past and the future together constitute wholes in which the past functions as matter and the future as form. It will then be possible to affirm, not that the past is changed by its future, or that there are "hidden potentialities" in it which are brought to realization, but that, while remaining what it was, it acquires new settings, implications and values. The past can provide content for many different wholes whose natures vary with the natures of the futures that provide their meaning or form.

5. He asks, "Is it not true that the past becomes different once an event—any event—joins it?" (p. 601). Yes, if by "different" one means "different for knowledge, epistemologically different"; no, if by "different" one means ontologically so. Otherwise Plato's every act, his life, and presumably his happiness could now be changed by what we now do. That life is completed, all that it ever can be. We can place it in new settings, make it constitute all kinds of wholes; we cannot change its substance or the meaning already ingredient in it.

6. Mr. Rotenstreich urges that "Because following on a necessitating past is essential to time, time does not allow for relations of exclusion between past and present" (p. 602). Necessitation does not, however, require inclusion. If it did, no asserted conclusion of a logical argument could be necessitated. The past may implicate, require certain features of the present that is to be. But when that present comes to be it replaces and thus must be exterior to what necessitated it.

7. He maintains that the past is both passive and active, "passive because it is enriched by the present which joins it; active

because of its impact on what enriches it. The past influences what again influences it" (p. 602). Taken literally this would seem to deny the linear movement of time and to allow for the complete alteration of the past. But he suggests to me something much more profound. His penetrating insight is preserved and paradoxes are avoided I think, if his remarks are changed to read, "the past is passive because completed by the future; it is active because, with that future, it helps constitute a single temporal whole."

D. Mr. Charles Hartshorne^s chides me for not having a better grasp of his philosophy and Whitehead's. In his characteristic eminently fair way he quotes passages in Whitehead which justify the view most students of Whitehead, in contrast with himself, take to be representative. It still seems to me that the passages Mr. Hartshorne quotes in favor of his own interpretation can with comparatively little difficulty be brought into harmony with the prevalent view, whereas his interpretation has to struggle a good deal to find a place for them (cf. p. 109). The main point of his paper, as he himself rightly observes, however, does not depend on the correctness of his or my interpretation of Whitehead. It is his own view which is in question. Of course I recognize no higher authority on Hartshorne than Hartshorne, and I grant regretfully but readily that I have misunderstood him, wherever he claims I have. But I am sorry to say that I still do not entirely grasp what it is he intends to say.

1. He maintains that God "suffers our despair" and yet "does not despair" (p. 101). Does God, without loss, undergo the despair and other feelings we have? If so, must He not have them just the way we do?

2. I see now, thanks to him and to Mr. Smith, that the past, all of it, is a datum for God. But it is not yet clear to me how or why Mr. Hartshorne thinks that the past as in God is identical with the past as it is in the world. The future adds new conditions to the past; it does not alter it. But the case of God is dif-

^s "The Immortality of the Past: Critique of a Prevalent Misinterpretation," this journal, VII (1953), pp. 98-112.

ferent. God is a unitary, concrete, single being; whatever is part of Him is one with every other part, and is to that extent other than it was apart from Him.

3. Mr. Hartshorne holds that the past is deficiently included in the present and perfectly included in God (p. 103). Memory he thinks requires the first conclusion, and the absolutivity of truth the second. But does memory include or only refer to the past? Are ideas in God exactly as they are in us, though there given a more permanent or ample lodging, or are they not somewhat transformed by Him? Does not God accept the world, as the end of the story of Job makes evident, on His own terms?

4. If I understand him, Mr. Hartshorne rightly recognizes God as having two roles. So far as God does completely what the world does deficiently He is a kind of apex, a limit of excellence; so far as He interacts with the world, functions as a correlative of it, He lacks the realities which make up the world, and is so far not complete or perfect. I think we must say that God represents the absolute in comprehensiveness, but is limited in His substantiality. As apex He has the entire, unqualified past as a datum; as concrete, He utilizes this datum, transforms it somewhat the way we, when we perceive, transform the data of perception. The past does not need God in order to be; but it does need God in order to be adequately evaluated—an activity which starts with the past as it is, and ends with it purged and divinized. I think Mr. Hartshorne tends to ignore this activity.

5. Mr. Hartshorne answers the question, as to why and how he thinks the past, as retained in God, is relevant to the present world, by a reference to the doctrine of God's superjective nature (p. 111). Let us grant—though the necessity for this is not evident to me—that what is in God is superjected onto the world. The grave question still remains as to whether the past in God is prehended by creatures in a shape similar to that which it has as part of God's vision.

I am now persuaded that God encompasses the whole of the past as a datum. It seems also to be true that God is a single being, subjugating all He encounters to His own intent and values. This means that He does not merely give lodgement to the past.

remember it, or add to it, but that He makes it part of His substance. Without detracting from this status, the past is also—as I hope the original paper made evident—sustained by a future, functioning apart from God. That is why it is possible for there to be a past made up of nothing but the residual facts left behind by the moving present.

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EXPLORATIONS

THE SCEPTICAL CRISIS AND THE RISE OF MODERN PHILOSOPHY: II*

RICHARD H. POPKIN

FATHER MERSENNE's reply to the new sceptics is in more of the polemical style of the day. Mersenne, 1588-1648, was one of the first men trained at the school at La Flèche. After completing his theological training and entering the order of the Minimes, he joined the ranks of those opposing the unorthodox side of Renaissance naturalism and fideistic Pyrrhonism. Between 1623 and 1625 he wrote some enormous polemical works in support of the true faith.⁸² This phase of his career ended with the publication in 1625 of his *La Vérité des Sciences contre les Septiques ou Pyrrhoniens*, a work exceeding 1000 pages in length. He then went on to become a one man association for the advancement of science, by publishing the scientific works of many of his contemporaries like Galileo, Gassendi, Hobbes, Fermat, and others, by keeping the various new scientists posted on the state of scientific research through his mammoth correspondence with figures like Descartes, Hobbes, Huygens, Galileo, and many others, and lastly by publishing many compendia of mathematical and scientific discoveries. Mersenne, as much as any man, was responsible for the amount of scientific information available to both trained scientists and intelligent laymen in the first half of the 17th

* For the first installment of this study, see this journal, VII, pp. 132-51.

⁸² Marin Mersenne, *Quaestiones in Genesim* (Paris, 1623); *Observationes et Emendationes ad Francisci Georgii Problemata* (Paris, 1623); and *L'impiété des Déistes, Athées, et Libertins de ce temps combatue, et renversée de point en point par raisons tirées de la Philosophie, et de la Théologie, Ensemble la réputation du Poëme des Déistes* (Paris, 1624). These works are described in Lenoble's *Mersenne*, pp. 25-28 and 31-33; and Boase, *Fortunes of Montaigne*, pp. 170-72.

century, and is certainly the key figure in making the scientists aware of each other's existence and progress.⁸³

Mersenne's answer to Pyrrhonism begins with a great deal of bombast in his dedicatory letter to the king's brother. The sceptics are the enemies of science, they are unworthy of being called men. Since they cannot support the light of truth within themselves they try to limit all human knowledge to the outward appearance of things, and to reduce mankind to a state as lowly as the stupidest animals. The sceptics are the enemies of God and science.⁸⁴ What Mersenne was seeking was a rational way of supporting simultaneously the truths of religion and of physics against the attacks of the Pyrrhonists and the Renaissance humanists.⁸⁵ The only sceptic that Mersenne names is Sextus Empiricus.⁸⁶ He probably had seen Gassendi's work since they had become friends around this time,⁸⁷ and had joined forces in attacking the pernicious influence of the alchemist and Rosicrucian, Robert Fludd.⁸⁸

The answer Mersenne gives is presented as a dialogue between a Christian Philosopher, an alchemist, and a Pyrrhonist. In the first book, after some preliminary argument, the alchemist is first refuted, and then the serious onslaught begins against the Pyrrhonist, and finally a brief answer is given to the man Mersenne later called the "ape of Pyrrhonism"⁸⁹—Francis Bacon. The Pyrrhonist states his case—we can only know the appearances of things, not the things as they really are; Aristotelian knowledge is not possible; we cannot know the essence of a single thing;

⁸³ Cf. bibliography in Lenoble's *Mersenne*, pp. xv-xi and pp. 33 ff.

⁸⁴ Mersenne, *La Vérité des Sciences*, Dedicatory letter and Preface.

⁸⁵ Cf. Lenoble, *Mersenne*, pp. 32-33. On p. 33 Lenoble lists Gassendi as an ally in this venture.

⁸⁶ An explanation of this is offered in *ibid.*, pp. 193-95.

⁸⁷ Cf. *Correspondance de Mersenne*, Vol. I, pp. 192-93, where evidence is offered to establish that the Gassendi-Mersenne friendship began in 1624-1625. In Lenoble, *Mersenne*, pp. xlviii, n. 2, the claim is made that Mersenne knew all of Gassendi's works prior to publication.

⁸⁸ Petrus Gassendi, *Examen Philosophiae Roberti Fluddi Medici, in quo & illius libros adversus R. P. Mersennum scriptos respondetur*, in *Opera* (Florence, 1727), Vol. III, pp. 197-245. The preface is by Mersenne. The work was originally published in 1630.

⁸⁹ Quoted in Boase, *Fortunes of Montaigne*, p. 173.

we can only know the effects of things, never their causes; and so on."¹⁰ The Christian Philosopher first answers with a pragmatic reply—we know enough to get along in this world even if we do not know the real nature of things.¹¹ The sceptic replies by showing the illusoriness of sense experience, the disagreements of philosophers on all questions, the paradoxes in mathematics, the relativity of value judgments, and the endless varieties of religious opinions.¹² The Christian Philosopher tries to answer by appealing to the fact that there are truths in science, mathematics, logic, metaphysics, morality, and religion that all reasonable men accept, and that being sceptical only leads to unhappiness.¹³ After all this preliminary disputation, next an exposition of Book I and much of Book II of the *Outlines of Pyrrhonism* of Sextus Empiricus is presented, along with a detailed answer to each type of argument from Sextus. The tropes which deal mainly with the illusoriness, variability and conflict of sense experiences are answered by an appeal to scientific explanations of perception. Thus, the problem of how to judge the true qualities of objects if different people experience them in varying ways is dealt with by pointing out the physiological, optical, and other causes of variation in sense experience.¹⁴ The problem of finding true premises from which to demonstrate other propositions is answered by maintaining that there are some matters such as "The whole is greater than the part" and "Fire is hot" which are never doubted by anyone.¹⁵ The search for a criterion for truth is solved by maintaining that human reason is the ultimate judge of what man can know. Mersenne was perfectly willing to grant the extreme limitations on human knowledge. We could not know the ultimate secrets of the universe; only God knows them. We could not know why things are as they are, or how they actually are. But we have an adequate basis for judging the truths of what we can know in order to live in this world and to worship the true God. Our tools

¹⁰ Mersenne, *La Vérité des Sciences*, pp. 7-11.

¹¹ *Ibid.*, pp. 13-15.

¹² *Ibid.*, pp. 22-39.

¹³ *Ibid.*, pp. 52-62.

¹⁴ *Ibid.*, pp. 130-62 and 179-89.

¹⁵ *Ibid.*, pp. 164-78.

are adequate for finding scientific laws and knowing that Catholicism is the true faith. The sceptic who is not satisfied with this has a worse disease than the dogmatic rashness that he is forever trying to cure."⁹⁶

In case the Pyrrhonist had not yet been convinced, Mersenne then presented the real "renversement de Pyrrhonism." "There is nothing more excellent for overthrowing Pyrrhonism" than the mathematical analysis of the ancients.⁹⁷ Just as Diogenes is reported to have refuted Zeno's thesis that nothing moves by walking around, so Mersenne tried to refute those who claimed all is in doubt by presenting the indubitable theorems of mathematics.⁹⁸ The last three-fourths of the answer to Pyrrhonism consists of a development of the various branches of mathematics. According to the editors of Mersenne's correspondence, young Descartes is the one referred to when Mersenne called for further aid in developing mathematics to overthrow the sceptics. "May it please God to give us in this century a few new Archimedes, who will lead mathematics to its last perfection." "⁹⁹

Most of the rest of Mersenne's writings were continuations of this method of overthrowing Pyrrhonism, presenting still further developments in mathematics and science. He never really saw, in spite of his intimate acquaintance with the members of the *Tétrade*, that the Pyrrhonists were challenging these very truths of mathematics and science, and denied that anyone could tell that these propositions in these fields were really true. He was satisfied that the truth was known. He was willing to admit that

we will never have any other science than that of exterior effects, without our being able to penetrate the reasons for them, and without our knowing the manner by which nature acts, until it will please God to deliver us from this misery.¹⁰⁰

⁹⁶ Mersenne, *La Vérité des Sciences*, pp. 190-98.

⁹⁷ *Ibid.*, p. 751.

⁹⁸ Lenoble, *Mersenne*, p. 192.

⁹⁹ Mersenne, *La Vérité des Sciences*, p. 750.

¹⁰⁰ Quoted in Boase, *The Fortunes of Montaigne*, p. 174 from Marin Mersenne, *Les Questions théologiques, physiques, morales et mathématiques* (Paris, 1634), p. 11.

Mersenne's friend Le Loyer considered such an admission sufficient grounds for considering Mersenne himself a sceptic.¹⁰¹

The full force of the new Pyrrhonian challenge, I believe, was only fully recognized by René Descartes, 1596-1650. Descartes alone seems to have seen that Pyrrhonists had cast in doubt all the scientific truths, mathematical theorems, theological certitudes, and Common Notions that Mersenne and Herbert of Cherbury had appealed to, and that in order to answer scepticism it is necessary first to find a solid and indubitable place to stand in order to fight back. In the beginning of the second of his *Meditations on First Philosophy*, Descartes compared himself to Archimedes who wanted only one fixed and immovable point in order to move the world.¹⁰² The real "renversement" of Pyrrhonism, we are told in his unfinished dialogue, *The Search after Truth by the Light of Nature*, is the finding of a solid basis of knowledge beyond all doubts.¹⁰³ In his reply to the Jesuit teacher, Father Bourdin, Descartes proclaimed himself to be the "first of all men, [to] upset the doubt of the Sceptics."¹⁰⁴

Before considering Descartes' way of overthrowing the Pyrrhonists, I should like first to show that Descartes was aware of the new *Crise pyrrhonienne* and in part constructed his philosophy as an answer to it. The usual interpretations of Descartes' philosophy are to see it as a complete rejection of scholasticism by establishing a new theory of knowledge to justify the new science, or, in the more recent readings of Gilson and Lenoble, as a modified form of Thomism directed against Renaissance naturalism.¹⁰⁵ Léon Brunschvicg and Charles Adam are the only

¹⁰¹ *Correspondance de Mersenne*, Vol. I, p. 521.

¹⁰² René Descartes, *Meditations on First Philosophy*, in *The Philosophical Works of Descartes*, tr. E. S. Haldane and G. R. T. Ross (Cambridge, 1911-12), Vol. I, p. 149. (Unless otherwise indicated the references to Descartes are to this edition).

¹⁰³ René Descartes, *The Search after Truth by the Light of Nature* in *Philosophical Works*, Vol. I, pp. 314-15.

¹⁰⁴ René Descartes, *The Seventh Set of Objections with the Author's Annotations thereon, otherwise a Dissertation concerning First Philosophy*, in *Philosophical Works*, Vol. II, p. 336.

¹⁰⁵ Cf. Etienne Gilson, *Etudes sur le rôle de la pensée médiévale dans la formation du système cartésien* (Paris, 1930), e.g., p. 143, and Lenoble, *Mersenne*, pp. 4-10.

scholars, to my knowledge, who portray Descartes as a man who created his philosophical system to answer the Pyrrhonists. However, Brunschvicg sees this only in terms of an answer to Montaigne, and ignores the development of Pyrrhonism up to Descartes' time.¹⁰⁶ Adam connects Descartes' views only with Mersenne's attack on Charron.¹⁰⁷ That Descartes uses a sceptical method, and employs sceptical arguments has been generally recognized.¹⁰⁸ What is lacking is the connection of this with the struggle against Pyrrhonism of the time.

When and how Descartes came in contact with sceptical views is very hard to tell, but that he did, I believe is beyond question. Lenoble states that the course of study at La Flèche that both Mersenne and Descartes (eight years later) were given included a consideration of how Aristotelian philosophy could answer the Pyrrhonian arguments.¹⁰⁹ However, no evidence is offered to support this claim about the curriculum at La Flèche. Descartes' biographer, Charles Adam, says that he read Cornelius Agrippa's work when he was young.¹¹⁰ In answer to the set of objections against his *Meditations* submitted by Mersenne, Descartes stated, "I had long ago seen several books written by the Academics and Sceptics about this subject [our knowledge of physical objects]." ¹¹¹ He and his opponents referred several times to their common

¹⁰⁶ Cf. Brunschvicg, *Descartes et Pascal*, pp. 130, 140-41, 145, and 151-52.

¹⁰⁷ Charles Adam, *Vie de Descartes*, in *Oeuvres de Descartes*, ed. Chas. Adam and Paul Tannery (Paris, 1897-1910), Vol. XII, pp. 130-35.

It should be noted here that in Alfred Espinas, *Descartes et la Morale* (Paris, 1925), pp. 9-17 and 58-94, an attempt is made to portray Descartes in relation to the religious campaign against the "libertins." However Espinas is concerned with the irreligious rather than the Pyrrhonian inroads of the "libertins."

¹⁰⁸ See, for example, the comments on Descartes' scepticism and the sources in traditional literature in Léon Blanchet, *Les antécédents historiques du Je pense, donc je suis* (Paris, 1920), pp. 175-77. Here Sextus, Carneades, Montaigne, Sanchez, Agrippa, and Pico are mentioned as those who employed the sceptical arguments before Descartes.

¹⁰⁹ Lenoble, *Mersenne*, p. 192.

¹¹⁰ Adam, *Vie de Descartes*, p. 31.

¹¹¹ René Descartes, *Reply to the Second Set of Objections*, in *Philosophical Works*, Vol. II, p. 31.

knowledge of sceptical literature.¹¹² Brunschvicg and Gilson have shown that Descartes was well acquainted with Montaigne's *Essais*, and used passages from them in his *Discourse on Method*.¹¹³ Pintard has shown that in 1630 Mersenne sent Descartes either a copy, or a digest of the *Dialogues d'Orasius Tubero* of La Mothe Le Vayer, and that this elicited a very strong response from Descartes denouncing the work as entirely false and dangerous.¹¹⁴ Descartes was almost violently nasty in his rare comments about members of the *Tétrade*, showing that at least he considered such people his enemies.¹¹⁵ He probably read Mersenne's *La Vérité des Sciences*, since the latter was his closest friend and sent him all the books that he wrote. In 1634 Mersenne published a Pyrrhonian work of Le Vayer's, the *Discours sceptique sur la Musique*,¹¹⁶ which he no doubt sent to Descartes. Descartes read Lord Herbert's *De Veritate* in 1638 and 1639.¹¹⁷ Lastly, Descartes was a friend of Jean de Silhon who, in his *De l'Immortalité* (1634), offered a "refutation of Pyrrhonism and the reasons that Montaigne gives in order to establish it."¹¹⁸ The last refuting point Silhon offered was that since the proposition *cogito ergo sum* was true, therefore scepticism is wrong.¹¹⁹ This use of Descartes'

¹¹² Ibid., p. 31; Petrus Gassendi, *The Fifth Set of Objections, Letter from P. Gassendi to M. Descartes*, in *Philosophical Works*, Vol. II, p. 151; René Descartes, *The Author's Reply to the Fifth Set of Objections*, in *Philosophical Works*, Vol. II, pp. 214 and 229; and *The Seventh Set of Objections with the Author's Annotations thereon*, pp. 279 and 335.

¹¹³ Brunschvicg, *Descartes et Pascal*, pp. 113-54, and the many references to Montaigne listed in René Descartes, *Discours de la Méthode*, with commentary by Etienne Gilson (Paris, 1947). Starting with the opening lines of the *Discours*, Gilson shows the large number of borrowings from Montaigne.

¹¹⁴ Cf. René Pintard, "Descartes et Gassendi," *Travaux du IX^e Congrès international de Philosophie* (Congrès Descartes), II, Part ii (1937), *Actualités Scientifiques et Industrielles*, No. 531, pp. 120-21.

¹¹⁵ Ibid., pp. 120-21. See also Pintard, *Le Libertinage*, pp. 203-205.

¹¹⁶ François La Mothe Le Vayer, *Discours sceptique sur la Musique*, au R. P. Mersenne, published in Marin Mersenne, *Questions harmoniques* (Paris, 1634), pp. 84-165.

¹¹⁷ Descartes, Letters to Mersenne, June 19, 1639, August 27, 1639, October 16, 1639, and December 25, 1639, in *Œuvres*, Vol. II, pp. 566, 570, 596-99 and 629, and supplementary notes pp. 647-48.

¹¹⁸ Quoted in Boase, *Fortunes of Montaigne*, p. 183.

¹¹⁹ Ibid., p. 184.

cogito occurred three years before the publication of Descartes' first philosophical work, the *Discourse on Method*, and during their friendship.¹²⁰

Thus, during the period in which Descartes was working out his philosophy, 1629-1637, there is ample evidence of his knowledge of Pyrrhonian thought.

Also, the violent answer Descartes gave Gisbert Voetius who called Descartes a Pyrrhonist in 1642,¹²¹ and the wrath and scorn that he heaped on Gassendi,¹²² suggest that there was a strong emotional involvement on Descartes' part in the Pyrrhonian controversy. Descartes was always trying to clear his good name whenever it was stated that he was a sceptic or that he cast doubts on any of the truths of the faith or science.¹²³

He also seemed to be well aware of the immediate threat of the sceptics. In the answer to the *Seventh Set of Objections*, Descartes said, "Neither must we think that the sect of the sceptics is long extinct. It flourishes today as much as ever, and nearly all who think that they have some ability beyond that of the rest of mankind, finding nothing that satisfies them in common Philosophy, and seeing no other truth, take refuge in Scepticism."¹²⁴

In the actual presentation of Descartes' philosophy its role as an answer to Pyrrhonism is more obvious, and is still more so in his controversy with Gassendi. The unfinished dialogue,

¹²⁰ Blanchet, *Les Antécédents historiques*, pp. 34-35, 124-25 and 136-37; and Adam, *Vie de Descartes*, pp. 93, 463 and note b, 463-66.

¹²¹ René Descartes, *Epistola Renati Descartes ad Celeberrimum Virum D. Gisbertum Voetium*, in *Œuvres*, Vol. VIII, Part II, pp. 169 ff.

¹²² René Descartes, *Announcement by the Author Relative to the Fifth Set of Objections; Letter from M. Descartes to M. Clerselier to Serve as a Reply to a Solution of the Principal Objection taken by M. Gassendi to the Preceding Replies, January 12, 1646; and The Author's Reply to the Fifth Set of Objections*, in *Philosophical Works*, Vol. II, pp. 123-34 and 204-33.

¹²³ See, e.g., René Descartes, *Notes Directed against a Certain programme Published in Belgium at the end of the year 1647*, in *Philosophical Works*, Vol. I, p. 448; *The Seventh Set of Objections with the Author's Annotations thereon*, pp. 335-36; and *Letter to the Most Reverend Father Dinet*, in *Philosophical Works*, Vol. II, pp. 354 ff.

¹²⁴ Descartes, *The Seventh Set of Objections with the Author's Annotations thereon*, p. 335.

The Search after Truth, is the only work where Pyrrhonism is specifically mentioned. This writing was intended to be the ideal summary of Descartes' views, and is variously dated as the first and the last of his works.¹²⁵ In it, a figure named Eudoxus represents Descartes, Epistemon represents an intelligent scoffer who doubts that any certain knowledge will ever be discovered, and Polyander portrays the layman who wishes to hear of the truths that wise men have found. Eudoxus begins by inculcating Polyander with the Cartesian method of doubt, i.e., the consideration of a view as false if there is the slightest reason for doubting it. With this method Polyander is led to see that all judgments based on sense information are dubious, since our senses often deceive us; all our knowledge about the characteristics of the world are dubious since we may be dreaming such a world when it does not really exist.¹²⁶ (The further Cartesian argument that all science and mathematics may be false because we may be perpetually deceived by some demon does not appear in this dialogue).

Epistemon suggests abandoning the method of doubt because "General doubts of this kind lead us straight to the ignorance of Socrates, or the uncertainty of the Pyrrhonists, which resembles water so deep that one cannot find any footing."¹²⁷ Polyander finds himself, as a result of following the Cartesian road; in a *crise pyrrhonienne* just like that described by Descartes in his *Discourse on Method* and his *Meditations*. Polyander reports "I know nothing with certainty, but that I doubt all things and am certain of nothing."¹²⁸

This sceptical crisis Descartes admitted many times¹²⁹ is what

¹²⁵ For a thorough discussion of the date of this work, see Ernst Cassirer, "La place de la 'Recherche de la Vérité par la lumière naturelle' dans l'œuvre de Descartes," *Revue philosophique de la France et de l'Etranger*, CXXVII (1939), pp. 261-300.

¹²⁶ Descartes, *The Search after Truth*, pp. 307-14.

¹²⁷ *Ibid.*, p. 314.

¹²⁸ *Ibid.*, p. 316.

¹²⁹ Cf. Descartes, *Letter from M. Descartes to M. Clerselier*, January 12, 1646, p. 131; *The Seventh Set of Objections with the Author's Annotations thereon*, pp. 279 and 335; and *The Principles of Philosophy, Author's Letter*, in *Philosophical Works*, Vol. I, p. 206.

results from taking the sceptics seriously. He confessed that the arguments he used to show the dubiousness of all our knowledge were just repetitions of what the sceptics had said,¹³⁰ except that, as he maintained to Burman, he had reinforced even the many doubts of the sceptics with still more of his own with his demon problem.¹³¹ As a result of this reinforcement of the sceptical attack, and the forceful picture of the power of the sceptical challenge in undermining all our certainty in common opinions, scientific knowledge, mathematics and theology, Descartes even found himself classed as a Pyrrhonist or sceptic by Gisbert Voetius, the rector of the University of Utrecht.¹³² For Descartes, the Pyrrhonian crisis was the first stage in way to certainty. The overpassing of Pyrrhonism could only be appreciated by passing through it. The people like Mersenne and Lord Herbert, and like many of Descartes' opponents, who appealed to scientific, mathematical, or theological truths as answers to scepticism did not appreciate that these matters could be put in doubt. The sceptics were perfectly right that nothing could be certain if it were founded on dubitable information, and hence to answer the sceptical crisis one must first recognize it.¹³³ Descartes told Father Bourdin that to get rid of the rotten apples in our basket of knowledge, first all the apples must be dumped out.¹³⁴ Then, and only then, can one be in a position to answer the Pyrrhonists. They suffer from the disorder of excessive doubt,¹³⁵ but begin with legitimate doubts. This must be recognized before one can go on to refute them, and

¹³⁰ Descartes, *Reply to the Second Set of Objections*, p. 31.

¹³¹ Descartes, *Entretiens avec Burman*, ed. Chas. Adam (Paris, 1937), p. 5.

¹³² Gisbert Voetius and Martin Schoockius, *Philosophia Cartesiana or Admiranda Methodus* (Utrecht, 1643), pp. 245 ff. The authorship of this work is discussed in Descartes, *Œuvres*, Vol. VIII, Part II, pp. v-vi; and in Adrien Baillet, *Vie de Monsieur Descartes* (Paris, n.d. [apparently 1946]), pp. 199-203.

¹³³ Adam, *Vie de Descartes*, pp. 130-35; also Descartes, *Entretiens avec Burman*, p. 125; and *Notes Directed Against a Certain Programme*, p. 448.

¹³⁴ Descartes, *The Seventh Set of Objections with the Author's Annotations thereon*, p. 282.

¹³⁵ *Ibid.*, p. 335.

show that we can have absolutely certain knowledge of God, mathematics and science, and can establish a criterion of truth. Epistemon, the scoffer in the dialogue, stated that this sort of approach is hopeless.

We have so frequently refuted the opinion of the Pyrrhonists and they themselves have derived so little fruit from this method of philosophizing, that they have been in error all their lives, and have not been able to get free of the doubts which they have introduced into philosophy. They thus seem never to have worked for anything but learning to doubt; that is why, with Polyander's permission, I shall doubt whether he himself can derive anything better from it.¹³⁶

Descartes pointed out that the sceptics in revealing the crisis in our knowledge doubted only for the sake of doubting.¹³⁷ There was however another use of scepticism. Once in a lifetime an intelligent man should try to rid himself of all uncertain or groundless views. He should become a Pyrrhonian in order to find certainty.¹³⁸ The permanent sceptics however are just obnoxious people, not seekers after truth.¹³⁹

To reach this Pyrrhonian crisis one should, according to Descartes, first adopt a way of life, that of following the customs of one's society undogmatically, i.e., following the traditional Pyrrhonian advice.¹⁴⁰ Then he should convince himself that sense knowledge is dubious because of the illusions we encounter, science is dubious because there may be no external world, math-

¹³⁶ Descartes, *The Search after Truth*, p. 320.

¹³⁷ Descartes, *Discourse on Method*, in *Philosophical Works*, Vol. I, p. 99.

¹³⁸ *Ibid.*, p. 99; Descartes, *Principles*, p. 219; and *The Search after Truth*, p. 322.

¹³⁹ Descartes, *Discourse*, p. 99; and *The Seventh Set of Objections with the Author's Annotations thereon*, p. 335.

¹⁴⁰ Descartes, *Discourse*, p. 95 on the "morale provisionnaire." A somewhat similar sort of Pyrrhonian morality is offered at the beginning of Spinoza's *On the Improvement of the Understanding* in *The Chief Works of Benedict de Spinoza*, ed. R. H. M. Elwes, Vol. II (London, 1889), p. 7. Compare with Sextus Empiricus, *Outlines of Pyrrhonism*, Loeb Library edition (Cambridge, Mass. and London, 1939), Book I, Chaps. viii and xi, pp. 13 and 17. See Gilson's edition of the *Discourse*, pp. 234-36 for the relevant passages from Montaigne and Charron on this matter. See also Boase, *Fortunes of Montaigne*, pp. 224 ff.

ematics is dubious because a demon may be systematically deceiving us.¹⁴¹ At this point one is supposedly shaken to the marrow of one's bones since it now seems possible that all is uncertain and there is no way out of this crisis. Descartes said that he first carried on this emergence into scepticism, this doubting in quest of certainty in 1628, which was shortly after meeting Mersenne, and probably shortly after being acquainted with the inability of thinkers like Mersenne to cope with the sceptical attacks of the day, and possibly shortly after realizing the havoc these attacks would play with the claims of the new science.¹⁴² Sometime around the winter of 1628 or early 1629 Descartes began to find the basis of all knowledge.¹⁴³ In 1630 he could write to Mersenne that he had found a way to demonstrate the truths of metaphysics, in a more evident manner than that used in geometry, that he had found the foundations of physics, and that he had an entirely satisfactory proof of the existence of God. Thus the atheists and *libertins* could be rejected.¹⁴⁴ In his *Discourse on Method*, Descartes pushed scepticism to its extreme limits and found a way of ending the *crise pyrrhonienne*. No matter how far he pressed his sceptical doubts he could not doubt that he doubted, that doubting was a form of thinking and then the famous conclusion of this, I think, therefore I am. Not even

¹⁴¹ Descartes, *Discourse*, pp. 101-105; *Meditations*, I, pp. 144-49.

¹⁴² Cf. Descartes, *Discourse*, p. 100; and Adam, *Vie de Descartes*, p. 130. Lenoble, *Mersenne*, pp. 17, 31 and 33, indicates that Descartes met Mersenne sometime between 1623-25, and on p. 36 that by 1628 they had become such good friends that Descartes had put Mersenne in charge of his correspondence. See also, Mersenne, *Correspondance*, Vol. I, p. 149. The first letter positively identifiable as from Descartes to Mersenne is from 1629, in *Œuvres*, Vol. I, pp. 22-29.

¹⁴³ Adam, *Vie de Descartes*, pp. 129-30; J. Millet, *Histoire de Descartes avant 1637* (Paris, et Clermont, 1867), p. 160; Descartes' letters to Gibieuf, July 18, 1629, and to Mersenne, October 8, 1629, April 15, 1630, November 25, 1630 and March 1637, in *Œuvres*, Vol. I, pp. 17, 23, 30, 144, 182 and 350.

¹⁴⁴ Descartes, Letters to Mersenne, April 15, 1630, May 27, 1630 and November 25, 1630, in *Œuvres*, Vol. I, pp. 144, 153 and 181-82. The book that Descartes was discussing in most of these passages has been identified by Pintard as La Mothe Le Vayer's *Cinq Dialogues*. Cf. Pintard, "Descartes et Gassendi," *Travaux du IX^e Congrès international de Philosophie*, II, Part ii, pp. 120-21.

"the most extravagant suppositions brought forward by the sceptics" were capable of shaking this truth.¹⁴⁵ An end to scepticism had been found, and from this point Descartes could strike out to construct his whole philosophy. An examination of this first truth showed that the reason why it is true is that it is clear and distinct, and hence the criterion of truth has been found.¹⁴⁶ Next, it is proven that God exists, and that He cannot deceive us. He compels us to accept whatever is clear and distinct as true, and because He is not a deceiver it is true.¹⁴⁷ Among the clear and distinct truths are those of mathematics. Our knowledge of the external world is not so easily certified, since we do not find our sense judgments to be clear and distinct and hence are not led through them to truth. We are compelled to believe that the essence of matter is extension and that the geometrical theorems of extended objects are true. But is there a world existing corresponding to them? The answer is yes because God would not make us think there was unless such a world really did exist. Thus the new science, the mathematical description of the universe was assured.¹⁴⁸

In the answers that Descartes gave to various objectors he made clear the structure of his philosophy. Mersenne had solicited objections from various learned men like Thomas Hobbes and Petrus Gassendi. Gassendi's objections, as Pintard has pointed out, were written just before Gassendi changed to being a materialist.¹⁴⁹

Two main themes that run through Descartes' replies are the fundamental and infallible criterion of truth is the principle that whatever is clear and distinct is true, and man's knowledge of a

¹⁴⁵ Descartes, *Discourse*, p. 101.

¹⁴⁶ *Ibid.*, pp. 101-102, and Descartes, *Meditations*, p. 158.

¹⁴⁷ Descartes, *Meditations*, III and IV, and pp. 184-85 of V, and *Reply to the Second Set of Objections*, p. 41.

¹⁴⁸ Descartes, *Meditations*, V and VI; *Principles*, p. 254; *Reply to the Second Set of Objections*, p. 39; *The Author's Reply to the Fifth Set of Objections*, p. 229; and *Entretiens avec Burman*, pp. 75 and 125.

¹⁴⁹ Pintard, "Descartes et Gassendi," *Travaux du IX^e Congrès international de Philosophie*, II, Part ii, pp. 115-20; and *Le Libertinage*, pp. 477-504. In the latter Gassendi's gradual shift from Pyrrhonism to Epicureanism is traced and analyzed in detail.

real world depends on the impossibility of God's deceiving us. Several of the objectors, and especially Gassendi, pointed out that men have often been convinced that what they knew was clear and distinct and yet it turned out to be false.¹⁵⁰ Descartes replied that he is not interested in what people have claimed. All that this sceptical appeal to the history of intellectual mistakes shows is that these people who maintained that they possessed clear and distinct ideas were just wrong.¹⁵¹ Descartes was then asked how one could tell the difference between those cases where our ideas appeared to be clear and distinct and those where they really were clear and distinct. In other words, one needs a criterion of the criterion of truth.¹⁵² Descartes replied that any wise or unprejudiced man could tell when his ideas were clear and distinct. There was no infinite regress of criteria of criteria, as the Pyrrhonists had claimed. The only reason anyone was a Sceptic was because he had never been able to find a clear and distinct idea. If he ever did he would be forced to give up his doubts.¹⁵³ Clear and distinct ideas cannot be uncertain or false, because God cannot be a deceiver. If one suggests that possibly we are deceived in believing that God cannot be a deceiver, and that all of our clear and distinct knowledge may be false ultimately, in that the real truths that God knows may be totally different from the truths we are forced to believe, Descartes would not

¹⁵⁰ See, for example, *The Second Set of Objections* (collected by Mersenne), in *Philosophical Works*, Vol. II, p. 27; and Gassendi, *The Fifth Set of Objections*, pp. 151-52.

¹⁵¹ Descartes, *The Author's Reply to the Fifth Set of Objections*, p. 214.

¹⁵² *The Second Set of Objections*, p. 27; and Gassendi, *The Fifth Set of Objections*, p. 152.

¹⁵³ Descartes, *Reply to the Second Set of Objections*, p. 41; *The Author's Reply to the Fifth Set of Objections*, pp. 226 and 229; *The Seventh Set of Objections with the Author's Annotations thereon*, p. 279; and *Entretiens avec Burman*, p. 5.

The compulsive aspect of our belief in clear and distinct ideas is made even more evident in Spinoza's statement of the criterion in *The Principles of Descartes' Philosophy* (La Salle, Illinois, 1943), Part I, Prop. xiv, p. 46, where Spinoza points out that God has not given us the power of withholding assent from what we clearly conceive, and therefore "those things to which we are constrained to assent when we clearly and distinctly conceive them are necessarily true."

admit the seriousness of this ultimate Pyrrhonism. The objector saw that this whole beautiful scheme of forced belief in clear and distinct ideas through which we know the real world could actually be a totally false picture.¹⁵⁴ Descartes replied only:

To begin with, directly we think that we rightly perceive something, we spontaneously persuade ourselves that it is true. Further, if this conviction is so strong that we have no reason to doubt concerning that of the truth of which we have persuaded ourselves, there is nothing more to enquire about; we have here all the certainty that can reasonably be desired. What is it to us, though perchance some one feigns that that, of the truth of which we are so firmly persuaded, appears false to God or to an Angel, and hence is, absolutely speaking, false? What heed do we pay to that absolute falsity, when we by no means believe that it exists or even suspect its existence? We have assumed a conviction so strong that nothing can remove it, and this persuasion is clearly the same as perfect certitude.¹⁵⁵

But this does not solve the problem. Descartes began his conquest of Pyrrhonism by insisting that anything dubitable must be discarded, and ends by insisting that what we are forced to believe as true is certain even though it may be false. This point becomes even sharper in his answer to Gassendi, when he dealt with what he called "the objection of objections,"¹⁵⁶ namely, is it possible that everything that we can conceive of, whether clear and distinct or otherwise, is just a figment of our imagination having no relation to reality? Descartes responded by pointing out if this were the case "it follows that nothing exists which we can comprehend, conceive, or imagine, or admit as true, and that we must close the door against reason, and content ourselves with being Monkeys or Parrots, and no longer be Men."¹⁵⁷ But this does not answer the objection of objections. The Pyrrhonists had claimed that we have to shut the door against reason because we can find no certainty. Gassendi could only conclude from studying Descartes' *Meditations* that the only matter not in doubt was that appearances appear.¹⁵⁸ Descartes had proclaimed his

¹⁵⁴ *The Second Set of Objections*, p. 27.

¹⁵⁵ Descartes, *Reply to the Second Set of Objections*, p. 41.

¹⁵⁶ Descartes, *Letter from M. Descartes to M. Clerselier*, p. 131.

¹⁵⁷ *Ibid.*, p. 131.

¹⁵⁸ Gassendi, *The Fifth Set of Objections*, p. 193.

conquest of scepticism in his ability to discover an indubitable truth and a criterion of truth. From these certainties he could go on to find indubitable guarantees of the truths of mathematics and the existence of a real external world describable in mathematical terms. The new science was saved from the sceptical challenge, and the *crise pyrrhonienne* forever ended. But the objectors had laid the groundwork for a new crisis, in that the whole rational structure might turn out to be a set of beliefs we had that we accepted as true, but could not relate to any real world outside us, or guarantee as absolutely true. The whole rational structure of Descartes might turn out to be just an illusion in his mind. The bridge from our thoughts to reality might still be undiscovered, and hence the sceptical crisis might still continue.

(To be concluded)

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NOTES AND OBSERVATIONS

SOME FRENCH HEGELIANS

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THE problem and the task of a synthesis of Existentialism with Marxism is not new; but since Sartre's articles "Les Communistes et la Paix"¹ and his exchange of letters with Camus,² the question has been reopened and discussed against the background of the Cold War. If such a synthesis is effected,—perhaps it has already been effected—it will terminate a second cycle or revolution in existential thinking. If the first revolution consisted in a return to Hegel *par delà* Kierkegaard, the second will consist in a return to Marx *par delà* phenomenology. Kierkegaard left behind him the task of situating this "acosmic self" in the world, in society, in history, and this has been accomplished to a certain extent by recourse to Hegel. Again, Husserl put the natural world in brackets in order to isolate the phenomenon in its purity and describe its essence. But apparently the suspension of the world cannot be indefinitely maintained; or rather, according to Merleau-Ponty, this suspension is only a preliminary operation which allows us later to return to the world and determine its rightful place. Once the phenomenological reduction has been carried out, it is impossible to go back to a Thing in Itself exterior to the phenomenon and which would rob it of its intrinsic meaning. The *être en soi* which Sartre posits is not noumenal but trans-phenomenal: it is co-extensive with and grounds the phenomenon. In matters of method, Sartre and Heidegger, as well as Merleau-Ponty, are opposed to a definitive bracketing of existence; or as the latter says: "Le plus grand enseignement de la réduction est l'impossibilité d'une réduction complète."³ But how is one to pass from the idea of irreducible existence to the dialectical notion of matter? Or how is one to conciliate Sartre's theory of freedom, which is limited only by itself, with a doctrine of determinism?

¹ *Les Temps modernes*, July 1952 and Oct.-Nov. 1952.

² *Ibid.*, Aug. 1952.

³ *Phénoménologie de la Perception*, p. viii.

Camus thinks no conciliation possible, that the two doctrines can be maintained at the same time only by a sort of hypocrisy, that Sartre accords an absolute freedom to man only so that he may submit to the yoke of Marxism. But that is because Camus is ignorant of the merits of phenomenology. If Existentialism and Marx have too many corners to fit together, well, then Marx must be put in brackets and deprived of his natural presuppositions and pretensions. And the first false evidence to be discarded will be that of matter.

None of the existentialists accepts the dialectical notion of matter. Marx claims to have turned Hegel upside down and to have set him on his feet; but that proves only that Hegel had neither head nor feet and can be rolled about as one likes. If Hegel is right in saying that spirit negates itself and becomes matter, so is Marx right in saying that matter negates itself and becomes spirit. But both doctrines are false because neither explains what is presupposed: the passage from matter to consciousness or inversely. As Merleau-Ponty says: "All these views are correct, provided one does not isolate them, provided one goes to the heart of history and recovers the unique core of existential meaning which becomes explicit in each perspective. It is true, as Marx says, that history does not walk on its head, but true too that it does not think with its feet. Or rather we have to concern ourselves neither with its 'head' nor its 'feet' but with its body."⁴ The relationship between mind and matter as Marx conceives it is false. And if this relationship is false, so is that between the economic and the ideological, between the infrastructure and the superstructure.

Having reduced matter, as it were, we must next describe its essence, for it is not enough to show that it is false. The sense or essence of matter is that of a revolutionary myth. And this myth was necessary to destroy the hypocritical pretensions and mystifications of the upper class. Moreover—and this is more important—materialism expresses the situation of the worker who does not consume and enjoy but who knows the hard necessity of things which resist him; or, as Hegel would say, the worker is

⁴ *Ibid.*, p. xiv.

alienated in the category of the thing. And this brings us to the next point where we will find positive agreement between the existentialist and the Marxist. Both agree that the worker is alienated. He is subjected to the necessity of the thing, of the economic, and he does not know himself in this necessity. But it is the worker himself, by his own labor, who has produced these things, this necessity, and he has produced himself bound by this necessity. He must "take back" his alienation, he must revoke this necessity, and he can succeed in this "revolution" because it was he himself who produced the economic system, with all its laws and apparent necessity, which now oppresses him. The revolution will thus be a transition from the reign of necessity to the reign of freedom: it will be the reconquest of freedom. In this respect Marx and Sartre are in agreement: man has no nature, or rather he produces his own nature and can therefore revoke it. In Marxian terms, the history of the world is the production of man by his own labor; and by transforming nature the worker transforms his own nature.

The primordial fact then is not matter but freedom in situation, freedom alienated in matter, if you like. The couples: matter-mind, economic-ideological, infrastructure-superstructure, draw their meaning from this primitive situation, which is what Merleau-Ponty calls the unique core of meaning. It is not a question of passing from one term to another by a sort of causality which would give priority to one term and not to the other, but of understanding all these terms globally as significations discovered by man situated in the world, in society, in history. Thus the *pour-soi*, the "human reality," is in the world and to a certain extent in the world of Marx, but a Marx "reduced" by phenomenology.

Phenomenology, in the hands of the existentialists, as in the hands of Hegel, has shown itself to be an instrument of synthesis. And Existentialism can develop indefinitely in this direction. It proposes to enrich itself with the data of Marxist sociology, and it has already annexed the various dialectics of master and slave, of class struggle, and of alienation. But these concepts have meaning only in the context of a concrete situation which itself refers to a free subjectivity. The slave chooses himself slave by

his fear just as much as the master chooses himself master by the risk of his life. Thus these dialectics are not necessities of spirit as for Hegel or necessities of matter as for Marx. They are necessities inasmuch as they are true of the past, but they do not entail inevitable results in the future. And the proof is that capitalism may last forever. And if I am a revolutionary, for example, it is not because these conditions suffice to make me one (for no condition suffices to produce a free act), but because I have chosen myself revolutionary. Nor is this choice purely arbitrary, according to the existentialists. The past already has a sense, men have already made decisions and acted upon them and thus given the past a direction. I can refuse certain directions and choose others or refuse them all, but still my choice is in terms of a situation which is already there.

It is easy to see why an orthodox Marxist would refuse to put the revolution on such a basis. Marxism claims to be "positive," to be a scientific discipline among others, and like the others to predict according to certain laws, which are in fact Hegelian categories. And it is unlikely that a Marxist would forego the prestige which he thinks science confers upon his doctrine. He feels, as people say, that history is on his side; a sentiment which is totally lacking among the existentialists. It is rather that they feel that history is not on their side, that they must act and become revolutionaries.

Until recently Sartre's conciliatory gestures toward Marxism have called forth only the vituperation of the communist press. But now there is no question of the communists' accepting his doctrine of freedom as the foundation of their theory; nor, on the other hand, will Sartre sacrifice any of his principles in order to become an orthodox Marxist. If he defends and embraces Communism, it will be *en dehors de ses principes*. How is that possible? In the first place Sartre believes, whatever may otherwise be said about it, that the Communist Party is the only revolutionary party today or at least the only one which acts with any efficacy. In the second place socialism, or reformism, is hypocritical and insufficient, and particularly in France where Léon Blum's Socialist Party "betrayed" the working classes. Socialism

is hypocritical and insufficient because it pretends to improve the conditions of the worker but only *as worker*.

Does the worker have any interests? It seems to me that the interest of the worker is not to be a worker. As Marx says: "The proletariat necessarily has the task of revolutionising his conditions of existence." Already I see the anticommunist shrug his shoulders: it seems that I am not serious and that these abstruse games lost France in 1939. All right. Let's be serious then. There are the interests of the worker *as worker*. That is to say he must, *to begin with*, accept his condition as a whole. With this done, he is conceded the right to improve the details. Thus the bourgeois thesis (in the rather crude form of classic economy as in the modern form of class-collaboration) is that the worker must remain worker. That is not surprising since he is made to be a worker just as the boss is made to be a boss.⁵

Reformism is inadmissible for any one who wishes to change man's conception of man. It presupposes that the worker is necessarily a worker and thus that he can never arrive at a classless society where the opposition of master and slave, of management and labor, is suppressed. And because Sartre believes that the only possible revolutionary force is the working class and that there is no chance of estranging it from the Communist Party—and where would it go if it left the party, he asks—then there is only one thing to do: cooperate with the Communist Party.

Such is Sartre's "engagement," and any existentialist is free to refuse it. But if he refuses it, what can he accept? Certainly not bourgeois socialism nor De Gaullism nor any theory based on distributive justice, that is, on a "nature" of man. Perhaps in matters of politics he can only accept or choose an attitude of total refusal, unless, of course, he is willing to cooperate *en dehors de ses principes*.

If we turn next to Camus' *L'Homme révolté*, we find such a refusal of politics or of anything resembling efficacy, though refusal is, according to the author, a way of affronting history in a spirit of revolt. This book could have been named, in Trotskyite style, *Revolt Betrayed*, and the betrayal of revolt is none other than its prolongation into a revolution. Once revolt is organised in the name of an ideology, has the masses behind it,

⁵ *Les Temps modernes*, July 1952, p. 27.

and heads begin to fall, Camus condemns it as nihilism, the cult of efficacy, the divinisation of history, and the justification of the end by the means. These concepts are given an abusive extension. And since every revolutionary is engaged in a reckless enterprise to divinise man, this "end" can justify all the means, which are necessarily of the most degrading sort because the revolutionary cannot love his fellow man but only a future and deceitful ideal: *l'homme divinisé*. This book is full of dilemmas, such as those of Love or Revolution, Revolt or Efficacy, God or Man, etc. With this division of concepts he has no trouble in showing that every revolutionary ideology which purports to liberate man necessarily enslaves him. And as Francis Jeanson said in his original review^{*} of *L'Homme révolté*, Camus doesn't care about the infrastructures. An ideology and its consequence, theory and practice, are telescoped together so that an impression of history results which is at once confusing and without consistency. But let us examine the book more closely.

Apart from the chapters on literary protest, *L'Homme révolté* is devoted to the study of the French and Russian Revolutions. First the author examines the philosophies, *le Contrat Social* and Marxism respectively, which furnished the ideologies for these two upheavals, and shows how each, when applied to human action, leads directly to the Reign of Terror. The Jacobin Revolution of 1789 was fought in the name of Reason, Justice, Freedom, Equality, etc. But since they were formal and transcendent, that is to say, not immanent in men's actions, these admirable principles had to be forced upon an unwilling population, and this violent imposition was called the Terror. Camus cites Hegel's remark that Kantian moralism when applied to real men results in the Reign of Terror. By the time of the Revolution of 1917, however, 18th Century rationalism had been discredited by Marx's critique of formal virtue and of bourgeois hypocrisy, which proclaims liberty and equality for all but does nothing to transform this *situation de droit* into a *situation de fait*. But now, instead of being transcendent to history, all values are identified with history, and the only rules of conduct are those of success and

^{*} Ibid., May 1952.

efficacy. Worse than that, Marx has divinised history, and any means which will hasten the descent of heaven on earth is sanctified. Thus both transcendentalism and historicism lead to the Reign of Terror. As Camus says: "Celui qui ne croit qu'à l'histoire marche à la terreur et celui qui ne croit à rien d'elle autorise la terreur."⁷

Thus, without taking into consideration the historical and economic conditions of Russia during and after the Revolution, Camus can conclude that Marx's philosophy, when put into practice, inaugurates the Reign of Terror. It is hard to discover whether his thesis is that of a logical or of an historical connection, for premiss and conclusion, cause and effect, are confounded in his thinking. Doubtless he would say the connection is self-evident. For my part, I do not find that the notion of historicity of values contains logically the notion of pure efficacy. I find that their connection constitutes a synthetic proposition which can be justified by an historical fact, but not by pure logic. But in Camus' book there is no hint of a critical method. That revolution perverts every revolt is for him at once an historical fact and a logical necessity. By an inspection of concepts he establishes historical truth and spares himself the effort of understanding fact. His method is a superficial rationalism, and bad reasoning is joined to a bad knowledge of history.

Camus seeks a solution to the dilemma: formalism or historicism by returning to the origins of revolution, to the act of revolt in its purity. The rebel is a man who says "no." This negation is pure tension and immediacy. It is the instant, not history. When it becomes mediate, that is, mediated by history, charged with an ideology, which is not part of revolt itself, it necessarily degenerates into terror. It is in this revolt, before it degenerates, before it enters history, that Camus tries to find a value which, though it transcends history, is not purely formal. In the negation of revolt he finds an affirmation; for the rebel in revolting posits an eternal value. "If indeed an individual accepts death, and does die on the occasion, in the movement of his

⁷ Ibid., August 1952.

revolt, he thereby shows that he is sacrificing himself for the sake of a God which he considers as higher than his own destiny. If he prefers death to the negation of this right which he is defending, it is because he places the latter above himself." ^a According to Camus, when a man revolts, it is always in the name of a superior principle, and this principle is none other than Human Nature, the solidarity of all men, a continuity of nature which binds them together and refuses to be degraded. Thus he concludes: "Je me révolte, donc nous sommes."

When a slave revolts, there is certainly the possibility of death, but also the possibility of life, and neither of these possibilities transcends history. Even if he revolts when there is no hope of survival, is his death proof that he sacrificed his life for a transcendent principle, for a human nature in general? There are doubtless rebels who died for the brotherhood of man. But again it is difficult to decide whether we are confronted with a logical or historical thesis. The Cartesian form of the argumentation makes it appear logical. But again I cannot accept the deduction of a universal principle from the notion of revolt. Surely Camus would be willing to admit that a slave might sacrifice his life for nothing, out of blank despair, when he felt that everything had given way, principles and all, and nothing could redeem his degradation.

The revolutionaries whom Camus praises are the Decembrists because they were all executed or deported, the communards of Paris because they were massacred, and the gladiators of Spartacus because they disappeared from Rome without making political demands. Thus the perspectives of revolt are limited. The most the rebel can do is bring immediate and temporary relief to his fellow man. Any attempt to aid him by attacking the bases of society is the "divinisation of man," the substitution of human for divine justice. Camus' practical philosophy has been called the ethics of the Red Cross. Francis Jeanson puts his finger on Camus' method when he says: "Finally, at times, you seem to find at the origin of every revolution that positive value which constitutes for you the very essence of revolt, and one says to

^a *L'Homme révolté*, p. 28.

himself that perhaps, by returning to its source, revolution would have some chance of being declared by you sound . . . But no! For you would only save it the better to prevent its living. And if you like its origin so much, it is because the latter represents in your eyes the point where you would like to see it fixed forever: which is precisely what your Revolt does by making it a point of honor to renounce every undertaking and by indefinitely keeping itself pure, never ceasing to start from zero."⁹

Next I should like to consider briefly a book published prior to *L'Homme révolté*. In *Humanisme et Terreur*, 1947, Merleau-Ponty asks the opposite question: How can Revolution emerge this side of Terror? In order to answer this question he considers the outcome of the French Revolution and the outcome predicted by Marx for the Proletarian Revolution.

Starting from freedom, virtue, and Reason, the men of '93 end with pure authority because they know themselves to be carriers of truth, that this truth, embodied in men and in a government, is at once menaced by the freedom of others and that the governed subject, inasmuch as he is other, is suspect. The Revolution of '93 is Terror because it is abstract and wishes to pass immediately from principles to the forced application of these principles. This being the case, there are two solutions. Either allow the Revolution to ripen, base it no longer on the decisions of a Committee of Public Safety but on a movement of history: this is the solution which Hegel perhaps glimpsed in 1807, it is the one Marx adopted. According to the *German Ideology*; the Revolution reduces to a minimum the Terror inevitable in the relations of men and finally leaves the Terror behind, since it is the advent of the great majority of men and of a proletariat which is, in itself, the "universal class." The older Hegel reserved this name, on the contrary, for the functionaries of an authoritarian State who see for all the direction of history and who create humanity by force and by war. He transforms, in short, Terror into an institution, he gives up the hypocritic universalism of 93, and, since after all Reason in office becomes violence, counts on violence to create the unity of men. The question today is to know whether the old Hegel will get the better of the young Marx.¹⁰

The answer will be ambiguous, like the answer of the Oracle, and will thus leave room for the decisions of men. But what are

⁹ *Les Temps modernes*, August 1952.

¹⁰ *Humanisme et Terreur*, p. 161.

the elements to be considered in view of an answer? First of all, the proletariat has not realised its role in history. Perhaps it will, but the advent of the classless society can not be indefinitely postponed without becoming an utopia. In its conflict with western capitalism, Russian communism has had to quell revolutionary "spontaneity" and impose discipline in the name of the "permanent interests" of the working classes. Revolution has been sacrificed in the struggle for world power. But can one assume that the orientation of communism has completely changed? that it is, as some say, the same as Fascism? "No", says Merleau-Ponty. Even if it is admitted to be "counter-revolutionary" in Russia, communism is nevertheless revolutionary in the rest of the world. "If it is true that the rivalry of the U.S.S.R. and of the United States explains a great number of facts, it is noteworthy that in the countries of lesser importance the former utilises the class struggle and is utilised by it; the two phenomena form an ambiguous ensemble where now one now the other dominates."¹¹

Marxism has failed by one of its own criteria: it has not become a part of fact. On the other hand, Merleau-Ponty holds that the Marxist critique of society is still valid, and as such Marxism is irreplaceable, its critique having discredited all the other solutions. For the author, Marxism is not a philosophy of history like others: it is the only theory which leads to the universal recognition of man by man. Any other solution is that of rulers and ruled, of agents and patients, of subjectivities which transform others into objects. "Hors du Marxisme, il n'y a que puissance des uns, et résignation des autres."¹²

The ambiguity of history, its contingency, is the condition of free action. Marxism is not a discredited theory, and is thus a possible solution. And if one chooses Marxism, then though this choice is itself contingent, there will be a progressive rationalisation of history as the proletariat achieves its goal. "History, despite its detours, its cruelties, and its ironies, already carries in itself, within the proletarian situation, an efficacious logic which

¹¹ Ibid., p. 169.

¹² Ibid., p. 168.

solicits the contingency of things, and the freedom of individuals, and turns them into reason."¹³ And again: "The route which appears to us as tortuous will appear perhaps, when time is done and history is revealed in its totality, as the only possible and *a fortiori* as the shortest of all."¹⁴

Merleau-Ponty chooses neither East nor West. His book is an "essay of comprehension," which attacks the good conscience of the West and does not condemn the violence of the East. But all regimes, according to its author, are based on an original violence, have their roots in a contingency which prevailed by force and by ruse. And they maintain themselves by violence, however humanitarian the principles they profess. Bourgeois society is no exception: class struggle on the inside and colonial policy on the outside. The important thing today is not to be pure in heart but to see in which direction violence is going, crescendo or diminuendo, and to use it and dominate it in view of a goal; for the bourgeois theory of means and ends is a mystification. In this way, perhaps, the Terror will be left behind.

Finally I should like to examine a work which brings together more systematically certain elements already studied. Alexandre Kojève's *Introduction à la Lecture de Hegel* gathers together the lectures he delivered at the *Ecole des Hautes Etudes* between 1933 and 1939. The publication itself dates from 1947. This study is for the most part a commentary of Hegel's *Phenomenology of Mind*, and Kojève himself is an Hegelian of the Left.

Hegel's philosophy is, for him, essentially a doctrine of freedom. Freedom itself is negativity, the power to negate and transform Being (*Sein* = immediate being). The naive consciousness finds itself placed before Being, which stands over against it in its pure exteriority and contingency, a *Gegebensein* which for the consciousness is a *Nichtgetanhaben*. This *Sein* is the element of exteriority and as such is Space or Nature. It is by the destruction of this pure element that freedom must assert itself and conquer its autonomy. Here Kojève even uses Sartre's notion of consciousness: *Das nichtende Nichts*. It is by the

¹³ Ibid., p. 139.

¹⁴ Ibid., p. 153.

negation of the *Gegebensein*, of the *Sein an sich*, that consciousness posits itself *für sich*, as Concept, and passes from Nature into History, from Space into Time. As Hegel says: "Die Zeit ist der Begriff selbst, der da ist." Time is Concept, that is, negative action which interiorises Being. But how is one to conceive the passage from *Sein* to *Handlung*? How is mind torn from the passive contemplation and enjoyment of Being and moved to negative action? This can be conceived only in terms of the dialectic of Master and Slave: one man enslaves another and forces him to work, that is, to transform nature. The slave, by his labor, negates nature and manufactures a product, out of nature he creates an human and cultural world of artifacts. He thus inaugurates history. Insofar as the slave works, he is free; for the negativity of freedom is essentially work (*Arbeit*). Hegel's is not the superficial idealism of contemplation but that of real men in the world (nature) who make it in their own image by real action (*Arbeit*). Kojève cites as epigraph Marx's comment that Hegel "erfasst die *Arbeit* als das *Wesen*, als das sich bewährende *Wesen* des Menschen." Thus Kojève identifies negativity and the work of the slave, and it is necessary to consider the dialectic of Master and Slave in order to understand how history began and how it continues.

Man is consciousness and self-consciousness. Insofar as he contemplates Nature or Being, he is only empirical consciousness, awareness of an object; but he is not aware of himself. It is Desire which awakens him to self-consciousness, to the sentiment of himself. He feels his desire as a void, as the absence of the thing desired. And it is the apprehension of this absence, of this nothing, which constitutes precisely his self-consciousness. Moreover this nothing is already active: it negates, consumes, and assimilates the object desired. In the act of consuming an object, man is at once negative action in the world and consciousness of himself as the origin of negation. But so long as his desire is directed toward a natural object only, his self-consciousness is itself only natural, that is, an immediate *Selbstgefühl*, the self-sentiment of an animal consuming its food. In order to achieve human self-consciousness, an awareness of a self which is not merely vital and organic, man's desire must be directed toward something which

is not a natural object. Now the only thing which is not a natural object is desire itself, since it is a void, the absence of the object and thus different from the thing desired. Thus man, to surpass his animal consciousness, must desire desire. And since his desire is negative action, he assimilates the desire of another, he desires to be desired, to impose his notion of himself upon another. To desire the desire of another is to exact recognition of what I am in my own eyes, so that my subjective certitude of my own value becomes objective truth, that is to say, it is recognised by another and, at the limit, by all the others. Otherwise my subjective notion of myself as free and autonomous is a sort of madness. But what the other sees before him is not a pure self-consciousness but a body. Certainly he sees a man or even a person, but he refuses to recognise an autonomous individual. So, in order to prove myself *objectively*, I must by a movement of pure abstraction disengage myself from the element of being, from the natural position of my consciousness in a corporeal mode. I must risk my life. Hence the struggle for recognition is a struggle unto death. If both adversaries risk their lives in this struggle and go to the limit of abstraction, which is death itself, no recognition will of course result. It is necessary that both live, that one risks his life and is recognized, and that the other, seized with fear of death, cannot detach himself from his body and from the element of life and is obliged to recognize. The one is the master and the other is the slave. The master is recognized but does not recognize; the slave recognizes but is not recognized in turn. The master is thus recognized by something which has no value in his own eyes. The slave, on the other hand, can revolt and exact recognition from the master and be recognized by a consciousness which he himself recognizes. For the master it is a dead-end, but the slave by his revolt can achieve the reciprocity of consciousnesses, the recognition of man by man. Moreover the slave is forced to work by the master. By working and transforming the world, the slave liberates himself from his body, which is his chain, and thus prepares his liberation from the master. The slave is in an active and immediate relation to the world, but the master's relation to the world is mediated by the slave. He can only consume and enjoy the objects which the slave prepares for him.

He can continue to risk life and fight wars of prestige, but his relation to the world is unreal. Whereas the slave knows the resistance of matter, inserts his image in the permanence of the thing, the master's acts are the vanishing acts of enjoyment and consumption, which leave no trace in the world. The master, isolated in his absolute autonomy, cannot progress in the world. The slave, because he could not make the movement of abstraction and detach himself from his natural condition, is alienated in the category of the thing. And his fear of the master makes him work. Thus he slowly liberates himself from the empire of the thing. He transforms it and in so doing he transforms himself. The master has immediately liberated himself at the risk of his life, but the "truth" of the master is pure abstraction, that is, death. The slave is mediation, progress, and history. It is by his slow labor that he moves toward the universal recognition of man by man.

Such, briefly, is Kojève's interpretation of domination and servitude. This is not the place to discuss whether history confirms or belies this dialectic. Certainly one can object that the relationship between consciousnesses can be other than that of opposition and struggle, that recognition can be immediate and mutual. This would be the concept of love. But Hegel considered that this concept lacked the "slow labor of the negative" and was therefore inadequate as an historical notion. Hegel is not trying to deduce history but to understand it in the light of certain categories. The successive mediations of the dialectic of master and slave are more apt to express the truth of history than the immediacy of love.

A few more words on Kojève's interpretation of Hegel. It puts freedom at the center of the doctrine and rejects any transcendental or mystical interpretation. God, History, Nature, are not so many transcendental entities where man loses himself. The slave in his activity of assimilation negates everything transcendent, takes back every alienation, so that the consciousness of the Other becomes the consciousness of the Self. It is not a question of deifying man but of reducing God and all forms of transcendence. Kojève's interpretation of Hegel, like Feuerbach's and Marx's, is resolutely humanist. He can thus be classed as

an Hegelian of the Left. And generally speaking all the existentialists who belong to the School of Paris—Sartre, Merleau-Ponty, Simone de Beauvoir, Roland Caillois—can be put in this category.

Existentialism, despite its attachment to Marx, tends to be a neutralism. Rejected by capitalism and communism alike, it oscillates between the extremes and cannot find its true center, which is in itself. Some would say that a new form of the unhappy consciousness has emerged. To say that is to take a superior attitude. But one feels that Sartre's compromise with the Communist Party must be rather unsatisfactory.

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ANNOUNCEMENTS

At the request of the International Union for the Philosophy of Science, the Forum of Zurich is organizing an International Congress for the Philosophy of Science. The Congress will meet for one week in Zurich beginning September 23, 1954. Dr. Ferdinand Gonseth is President of the Congress Committee. Dr. Gonseth and members of his Committee invite suggestions and comments about the program and arrangements. These may be sent to the Office of the International Forum of Zurich, Swiss Federal Institute of Technology, Room 20D, Zurich 6.

An International Institute of Political Philosophy has been formed. Designed to bring together scholars who approach the problems of political philosophy from many different orientations, the Institute has taken the concept of sovereignty for its first field of inquiry. The inquiry will form the subject of the first meeting of the Institute and of the first volume of its *Annals*. The headquarters of the Institute is at the Sorbonne. Professor G. Davy, Dean of the Faculty of Letters, is President of the Institute's Board of Directors.

The editors of *Kantstudien* announce their plans for resuming publication. Volume 45 will appear in February 1954. The monograph series has already been resumed with Number 66. Manuscripts for publication should be sent to the editor, Professor Gottfried Martin, at Philosophisches Seminar Universität Köln. The annual subscription price is 28 DM. Orders may be placed with Kölner Universitätsverlag, Köln-Weidenpesch, Neusser Strasse 624.

The meeting of The Metaphysical Society of America will be held at the Harvard Graduate Center, Cambridge, Massachusetts, on March 19-20. There will be a panel discussion on "The Nature of Cognition." The Presidential Address will be given by Professor John Wild (Harvard University). Papers will be read by Professors L. Lynch (Toronto), F.S.C. Northrop (Yale), E. Vivas (Northwestern), and W. Wick (Chicago).

BOOKS RECEIVED

- Aquinas, St. Thomas: *The Division and Methods of the Sciences*.
Tr. by A. Maurer, C. S. B. Toronto : Pontifical Institute of
Mediaeval Studies, 1953. xxxvi, 96 pp.
- Barter, E. G.: *Relativity and Reality*. New York: Philosophical
Library, 1953. xii, 132 pp. \$4.75.
- Bello, Antonio M.: *Origen y Meta del Autonomismo*. Havana:
P. Fernandez y Cia, 1952. 180 pp.
- Bhattacharyya, Kalidas: *Alternative Standpoints in Philosophy*.
Calcutta: Das Gupta & Co., 1953. x, 366 pp. 10/8.
- Bidney, David: *Theoretical Anthropology*. New York: Columbia
University Press, 1953. xiv, 506 pp. \$8.50.
- Caponigri, A. Robert: *Time and Idea*. Chicago: Henry Regnery
Co., 1953. viii, 226 pp. \$3.00.
- Chan, Wing-tsit: *Religious Trends in Modern China*. New York:
Columbia University Press, 1953. xvi, 328 pp. \$4.25.
- Creel, H. G.: *Chinese Thought from Confucius to Mao Tsé-tung*.
Chicago: The University of Chicago Press, 1953. x, 294 pp.
\$5.00.
- Dubarle, D.: *Humanisme scientifique et Raison chrétienne*.
Paris: Desclée de Brouwer, 1953. 144 pp.
- Empson, William: *The Structure of Complex Words*. London:
Chatto & Windus, 1952. 452 pp. 22/6.
- Fagothey, Austin, S. J.: *Right and Reason*. St. Louis: C. V. Mosby
Co., 1953. 584 pp. \$5.75.
- Hume, David: *Traktat O Naturze Ludzkiej, II*. Tr. by Czeslaw
Znamierowski. Krakow: Polska Akademia Umiejetności,
1952. 380 pp.
- Humphrey, George: *Thinking: An Introduction to its Experimental
Psychology*. New York, John Wiley & Sons, Inc., 1951.
xii, 332 pp. \$4.50.
- Hyppolite, Jean: *Logique et Existence: Essai sur la Logique de
Hegel*. Paris: Presses Universitaires de France, 1953.
250 pp.

- Jaspers, Karl: *Raison et Dérailson de notre temps*. Tr. by Hélène Naef. Paris: Desclée de Brouwer, 1953. 82 pp.
- Jaspers, Karl: *The Origin and Goal of History*. Tr. by Michael Bullock. New Haven: Yale University Press, 1953. xviii, 294 pp. \$4.00.
- Jung, C. G.: *Two Essays on Analytical Psychology*: Volume VII of *The Collected Works of C. G. Jung*. Tr. by R. F. C. Hull. New York: Pantheon Books, 1953. x, 330 pp. \$3.75.
- Lavelle, Louis: *Traité des Valeurs*. Volume I: *Théorie générale de la Valeur*. Paris: Presses Universitaires de France, 1951. xvi, 752 pp.
- Lean, Martin: *Sense Perception and Matter*. New York: The Humanities Press, 1953. x, 218 pp. \$4.50.
- Lechner, Robert, C. PP. S.: *The Aesthetic Experience*. Chicago: Henry Regnery, 1953. vii, 144 pp. \$3.00.
- Liebrucks, Bruno: *Platons Entwicklung zur Dialectik*. Frankfurt/M: Klostermann, Vittorio, 1949. 256 pp. 17.50 DM.
- Löwith, Karl: *Heidegger: Denker in dürftiger Zeit*. Frankfurt/M: S. Fischer Verlag, 1953. 112 pp.
- Lytkens, Hampus: *The Analogy Between God and the World*. Uppsala: Almqvist & Wiksells Boktryckeri, 1952. 494 pp.
- Magalhães-Vilhena, V. de: *Socrate et la Légende platonicienne*. Paris: Presses Universitaires de France, 1952. 238 pp.
- Magalhães-Vilhena, V. de: *Le Problème de Socrate*. Paris: Presses Universitaires de France, 1952. 568 pp.
- Mauriac, François: *Letters on Art and Literature*. Tr. by Mario A. Pei. New York: Philosophical Library, 1953. 120 pp.
- Meland, Bernard E.: *Higher Education and the Human Spirit*. Chicago: The University of Chicago Press, 1953. x, 204 pp. \$4.00.
- Noble, Vernon: *The Man in Leather Breeches*. New York: Philosophical Library, 1953. 298 pp. \$6.00.
- Oparin, A. I.: *The Origin of Life*. Tr. by S. Morguliss. Second Edition. New York: Dover Publications Inc., 1953. xxvi, 270 pp. \$3.00 in cloth; \$1.70 in paper.

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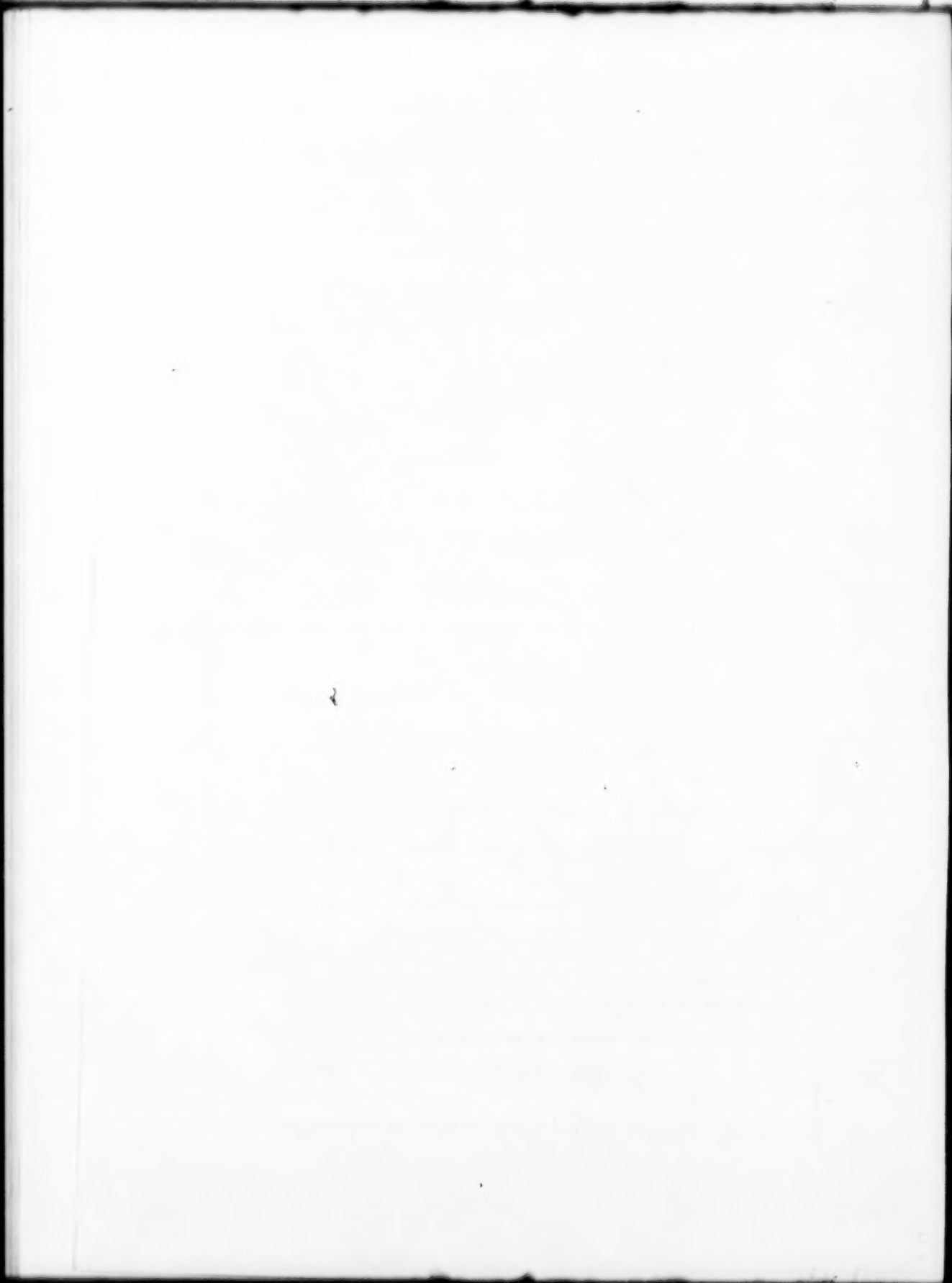
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